

THE ROLE OF USER PARTICIPATION IN DESIGN DECISIONS

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SUMMARY

The purpose of this study is to investigate the extent to which users must participate in building and planning decisions which will affect their environment. By definition, it follows that the users should take part in the design process and should share the design product with the designers in order to achieve a built-environment responsive to human behavior and needs.

The state of art shows that although user needs have been and still are of great concern to the designers, users seldom directly express their needs. Twenty-one systems are evaluated with regard to the specific methods applied to certain participatory problems. Each of these methods is then considered from the viewpoint of success or failure. A method is then developed and tested using the proposed Addition to the Architecture Building at Georgia Tech as an experiment.

Various user types, as representatives of the future users of the Addition to the Architecture Building, participated in group discussions to establish the goals of the Addition followed by individual evaluations. The comparison between the user goals and the goals of the architects and the Building Committee (programming and designing the Addition) indicated that there were many differences in the goals and the priorities of these goals substantiating the hypothesis that the users knew their own needs better than the designers.

The findings, from the literature survey and from the experiment lead to the conclusion that user participation is a problem in its own right and that the method devised was dynamic, generalizable, quick,

inexpensive, simple and effective. Therefore, the integration of the user into the process of deciding on planning issues can be attained through institutionalization of the participatory design process. Hence, the first essential strategy is one in which people are educated about user participation and environmental awareness.

CHAPTER I

INTRODUCTION

Designers of buildings have been concerned with the needs of the persons who are to occupy their completed work. Historically, formally-designed buildings have mostly been planned for and occupied by the wealthy and the powerful. Communication between designer and user was direct so satisfaction for both parties was easy to achieve. However, the emergence of a dominant and affluent and mobile middle class, the popularity of democratic societies, the humanistic belief that people are entitled to use and occupy buildings which enrich their lives, and the industrialization of building processes have decreased the direct contact between designer and user. This paper seeks to explore ways in which those persons who are not normally involved in the building process can participate in decisions made about design. Examples of the groups we are concerned with include workers in factories, buyers of built housing, students in schools, office tenants, and similar persons who occupy various facilities for a significant period of time. Visitors are other groups who are casual users and are not a part of this study.

The Meaning of User Participation

In defining user participation, as the term will be used in this paper, we will identify the components of the term in the context of design.

A User is one who is or will be directly affected by a particular set of design decisions.

A Decision is an act of choice which generates commitment to a specific course of action. A decision is identified by two main properties: possession of specificity and commitment.

The Decision making Process is an administrative, technical and political process.

Participation is a decision-making process.

Participating is partaking of the essential nature of something. In participation; political process should incorporate maximum participation. Administrative and technical processes do not determine specific design commitments but leave maximum scope to the political process. Political process by itself, offers scope for participation.

Areas in which such participation is appropriate are:

- a. Community work
- b. Community organizations
- c. Evaluation tools for policies
- d. Investigations of socio-technical problems

These have in common the purpose of exploring alternative futures for the community.

The two main interpretations of participation¹ are teleological and deontological. The first one is concerned with the use of the processes of user participation as a way to realize positive goals; the second is a statement of belief in the moral validity of persons to participate in decisions which affect their welfare. Characteristics of these two points of view are outlined in the chart following.

Table 1. Comparison of Teleological Interpretation of Participation and Deontological Interpretation of Participation

	TELEOLOGICAL INTERPRETATION OF PARTICIPATION	DEONTOLOGICAL INTERPRETATION OF PARTICIPATION
Goal	REDUCE ALINEATION OF THE INDIVIDUAL FROM THE PHYSICAL ENVIRONMENT IN AN INDUSTRIALIZED SOCIETY.	GIVE TO THE INDIVIDUAL THE BASIC RIGHT TO TAKE PART, CONTRIBUTE TO THE DECISIONS AFFECTING HIS LIFE.
	ENABLE THE INDIVIDUAL TO DEVELOP HIS POTENTIAL AND FEELINGS.	LET PEOPLE INDIVIDUALLY DETERMINE THE VARIOUS ENDS THAT THEY WISH TO PURSUE.
	HELP FOR THOSE LESS ABLE TO HELP THEMSELVES.	MAKE PEOPLE REALIZE THAT PARTICIPATION SUPPORTS THE PRINCIPLE OF SELF-DETERMINATION.
	ORGANIZE INTO A POLITICAL FORCE THE COMMUNITY OF USERS INVOLVED.	
Principle	PROVIDE BETTER INFORMATION TO THE PROFESSIONALS.	
	PARTICIPATION IS A MEANS TO AFFECT SOME GREATER GOOD.	PARTICIPATION IS AN END IN ITSELF.

Participation is a developing concept in planning activity where planning means the act of arranging beforehand for changes in the physical environment and where Design means the product or the process of designing. It follows, therefore, that Participatory Planning is not a method but an attitude toward planning and it creates methodological and ethical problems. Participatory Planning, also called Advocacy Planning is a term introduced to the Urban Planning world by Davidoff.² Advocacy Planning is the process in which the community chooses an advocate planner as a spokesman of its values and technical problems who then intermediates between the community and influential decision-making political institutions.

More specifically Design Participation means that the individual user becomes a member of the design team during the design process as well as a sharer of the design product. It allows the participants the opportunity of influencing the design process and the design product. Design Participation does not necessarily mean user harmony. Through User Participation the involvement and influence of the user group in the design process is achieved; in other words it is the active partaking of the people, who will live with the design consequences, in the process of designing. User Participation demands power interchange so that the action can be examined from the points of view of interested groups. Therefore the user should help the designer in making decisions on conflicting issues of design to avoid the involvement of too many numbers of design participants.

The people are to make the planning in User Participation but still the professional planner's role in the design process is crucial. He should organize the work by offering issue based information systems. Besides he is the one to induce the people's ideas not to generate various plans. He is supposed to be the catalyst by his technical knowledge and methods with the renewed definition of Architecture being more than function, form and visual aesthetics. All of these efforts aim at providing the designer with accurate data.

If the user is involved in design decisions at least there is the guarantee that some solution will be reached in the implementation phase of any problem, because the users have the power to implement their decisions, and there will be a feedback from the people who are to be affected by the decisions toward those who decide.

Motivation

This attitude of the architect stems from the motivation in people for participation. They wish to get involved in the things going on in their environment; they want to manipulate their lives in the framework of their environment and finally, they want to control their environment. In a way, the motivations are based on prediction and anticipation in the future.

Human Needs

Human needs become the major design objective in the satisfaction of individuals in the society. The needs are the function of the time factor and communicative improvement. Therefore, the decision-making

criterion is the satisfaction of those needs. Types of needs include:

- a. Normative needs; identified when individuals or groups in a given situation are below a desirable standard or norm with respect to a clearly defined set of criteria.
- b. Felt needs; identified as "wants" by asking people whether they feel the need of something.
- c. Demonstrable need, identified as the realistic need of the user.
- d. Expressed need, identified as felt need with some action to back it. Desire is strengthened by demand.
- e. Comparative need, identified as characteristics of individuals or groups whose certain needs are defined by some means and are provided for and are identified as criteria. Other people without the same characteristics are found to be in need.

The identification of the above mentioned needs is very important but is limited by an individual's perception. Therefore, there is a need for a research methodology to be concentrated on the types and levels of individual demands. The needs of man are hierarchical according to the detrimental cultural factor. Maslow classifies the priority of the needs as³.

- a. physiological
- b. safety
- c. love
- d. esteem
- e. self-actualization

For man's survival those needs and subneeds have to be defined and satisfied. Calder is emphasizing the importance of the needs when he says that abstract needs are the main goals of humanity.⁴

Subneeds fill the gap between the abstract needs and specific behavior of the user. People tell their will or show their preferences by their behavior and the determination of the behavior is by observation. Then the behavior will feed the design through values.

The values of one person are different from the values of another person. Therefore, they are crucial factors to study if the needs of users are to be determined. The individual has two systems of values: those of the conscious mind and those of the subconscious.

The physical solutions obtained at the end of the decision process in the design context are to form the coordination of social behavior and the environment because social and interpersonal interaction is the most important behavioral aspect related to the environment. The architect must form the interface between the two in such a way that physical environment can help to maximize human interactions. This is a problem in its own right because it is impossible to know accurately cognitive behavior. As a partial solution, the designer should learn from the techniques of systematic observation so to fulfill the behavioral expectations in the environmental design.

The wide extent of the problem necessitates the participation of the anthropologist, the social scientist and the environmental psychologist. The communication between the architects and the human scientists is necessary for research into the user's personality,

culture and the social organization can become criteria for design.

Behavior

Behavior in the context of this paper is limited to quantifiable, observable behavior. Behavioral patterns identified through study can be established through observation, by interview, by questionnaire and by experiment. The process which has the highest potential for success is observation since it is direct; the participation of the observer is active and the process includes the response of the observed.

The way in which people organize their long-term behavior patterns are unlikely to change by time. However, the behavior itself changes and develops in three stages or levels. Edward T. Hall's description of the developmental levels are:⁵

- a. formal
- b. informal
- c. technical

Behavior in the formal phase is generally accepted and applied to everyday life and communicated through tradition; in the informal phase the hidden directions are communicated through practice; and finally, when in the technical phase, behavior is communicated through technical assistance and its study is based on analysis.

To see the relationship between behavior and the environment, it is helpful to examine the components of human behavior.⁶ They are:

- a. Isolates: abstract components of words like voice tone,

pronunciation huds, conversation distances.

b. Sets, words.

c. Patterns: tendencies, operational versions of human needs; the way sets are formed in a language. They are specific to human groups of the same subcultures.

The close link between the social environment and behavior is such that as the constraints of social living increase, behavior becomes determinate. An extreme case is the behavior of chronic psychiatric patients. The people and/or the environment cause constraint of human behavior. If the behavior is constrained totally, voids in behavior occur. The decrease of social contact, as can be predicted, results in indeterminate behavior.

A badly organized environment is a source of conflicts, which, if it lasts long, will cause "behavioral sinks"⁷ because people are part of the environment. Page's definition of environment is "the set of factors outside the system."⁸ It has a dual relation to the system. The invariant data, environment of the system, shapes the constraints which generally form a larger system of subculture and topology.

Subculture

Subculture defines the characteristics of user behavior. Therefore, subculture should be the social unit of design. Being a subdivision of culture, subculture represents the common elements of a group of people. Its features are:

- a. Socio-spiritual (education, arts, income, socialization).
- b. Hereditary (descent, recognizability, language, costume).
- c. Biological (motor, sensor abilities)

d. Personal (sport life, family life).⁹

Subculture is dynamic; changes from formal to informal to technical level. Facilities for particular subcultures are centered geographically in such a way that specified tendencies belong to specified spatial needs.

Topology

Topology consists of the elements of

- a. topography.
- b. geography.
- c. climate.
- d. local features of the natural environment.

The elements that are changeable by technology cannot be considered as typology. Typology together with culture influences design data.

There is the gap between what designers do to form and change the environment, and what people need from their environment. The degree of environmental fulfillment to the stimulus of human demands is shown by the adaptations of people.

The originator of the new environment is the client, who can be the city government, a firm or a family. The client is in search of optimal satisfaction based on the suboptimization of security, achievement, and other needs to be met for a balanced human life.

The environmental response has two extremes; one is the structural, directive and authoritarian, while the other is minimally structured, open and flexible. In between these two extremes, environment can be ordered, harmonious, delightful, welcoming and communicating.¹⁰

Types of User Participation

According to the involvement and interaction of the User in the design process, participation can be classified as follows:¹¹

Individual Participation

Active or Direct Participation. It is characterized by the involvement and influence of the user. In this case, the user makes the decision himself by his choice of a course of action among a set of alternatives. Although his interaction (involvement and influence) is great on the project, the alternatives might be limited due to the unfitness of his choice to his needs. For example: the user client buys a lot from the developer, purchases a book of house type plans from an agency, selects one type of house plan, gets it detailed in design, and finds a builder to build it for him. He can alter it during construction as he wishes. Therefore, the architect, designing the book of houses must be very conscious of the life style and requirements of the user.

Special Participation. It is characterized by involvement of the user but without his influence. This type of participation is feasible only in small scale design projects.

Passive Participation. It is characterized by no involvement of the user, yet with his unlimited influence. The user states his needs to the architect in the form of performance requirements during the programmatic phase of the design, but does not actively participate in the design decision.

Rehabilitation Participation. It is characterized by partial involvement and partial influence of the user. The architect offers alternative schemes in a general framework. The user details it with regard to his own needs and demands. This type of participation stimulates the users by making him feel that his decisions are important and effective in changing the environment even after the first rehabilitation period.

Second Hand Participation. It is concerned with the use of surveys to establish the tenant's or user's goals.

Community Participation

The involvement of individuals and the community makes this type of participation much more complex than individual participation. The need for community participation arises from the fact that architects cannot gather all of the information about all the families who will occupy the buildings.

The achievement of individual involvement can be achieved either

a. By fitting the user's construct system to that of the designer.

b. By imposing the user's construct system on the designer's.

In this, "involvement" implies that the person is involved in the situation. Conversely, "influence" implies that the situation is affected by the user.

The State of User Participation

Concept

The concept of user participation is very old, in fact Architecture has long been concerned with user needs. The level of participation in terms of user involvement changes from less sophisticated to more sophisticated and can be anticipated in this fashion:

- a. Primitive level of participation; passive user participation in the form of performance requirements.
- b. Retrospective feedback.
- c. User-based design.
- d. Team design: client-user collaboration.
- e. User as the technologically assisted designer.
- f. User participation through simulation.
- g. User controlled simulation to identify user input objectives.
- h. Collaborative design between external and internal users through simulation-agreed user input.
- i. Adaptive design system including designer controlled, user controlled and automated controlled design systems.

From the times of Pericles, Locke, and Rousseau to modern times, the concepts of "equality of man" and "symmetry of ignorance" have survived and kept their importance. The idea of the equality of man originated the principle of determination which ended up with "right of participation". It is justified through the rationale of "symmetry of ignorance"¹² since the amount of knowledge to solve a planning problem is infinite, and since people differ in the extent and content of their

knowledge. Therefore, it follows that people are equal in what they do not know, hence, they are equal in ignorance.

Rawls¹³ argument on the right of participation is based on justice as fairness. He bases social justice on two principles.

- a. People have equal opportunity to claim social good.
- b. Each person has equal right to the maximum liberty compatible with similar liberty to others.

Although there is no independent criterion for the right result, as long as the process is followed correctly, the outcome is correct. If planning is assumed to be part of social life, participatory planning has to be a just and fair process. In parallel to the general principle of social justice, in participatory planning individuals have an equal opportunity to determine plans which may affect their well-being, and each person has the right to maximum liberty compatible with similar liberties of others.

Protzen and Ouye¹⁴ are pessimistic about the application of this theory in practical life: they regret that the ideals of equality, and self-determination have been achieved in the legislative aspects of public life, for example in administration and economics, but not in the area of planning.

User Participation Prior To The Twentieth Century

Before the twentieth century, ordinary people usually built houses for themselves without employing architects. The user was often both the designer and the builder. If not, often he was in a position to influence the decisions.

The classical principles of user participation are that the future user of the architect's product is the starter of the operations and that the future user has the right to make decisions.

User Participation In The Twentieth Century

The old concept that Architecture has long been concerned with user needs is seldom translated into active participation. The "traditional impulse of the designer is to create a tyranny"¹⁵ as Crickmay says in "The Threat of Planned Living."

The public being excluded from the design decisions and being unable to see through the planning world, could affect the decisions indirectly. If the design decisions turn out to be contrary to their interests, the users can protest through politics. Hence, to a limited extent the user response can affect the design activity. In this situation, the relation between the user and the designer is indirect through politicians. The remoteness of the distance between the designer and the user on the product grows as the societies grow complex and as a result, the designer cannot know the nature of activity and behavior patterns. The participation of the user in the design is passive; through giving the designer performance requirements. There needs to be a two way communication in which complexities are made fully intelligible to the public.

Advocacy Planning. The designer of the recent years has felt the demands of more effective user participation. Society and technology have become more complicated. This complexity has motivated architects and owners to look for new ways to determine the basis for environmental design. Present social structure demands that the

modern programmer express the user needs analytically, objectively, and logically. Urban Planning was the first design field to feel the need for user participation in design because users are the ones who must live with and/or suffer the results.

In the sixties, Paul Davidoff¹⁶ perceived the cultural discrepancy between the planners, and his diagnosis of the problem was that planners could not represent other people's values. To overcome this, he recommended that the people who are to benefit from a certain plan be represented by a planner who would serve as an advocate of their position. The planner should know the affected people's values, and should know the technical language of planning in order that he might support the people's needs and desires against the professionals. The role of the advocate planner is therefore

- a. To develop planning strategies for the group he represents.
- b. To develop physical designs.
- c. To develop implementation programs.
- d. To reflect the people's needs in public plans.
- e. To bring those plans to the attention of influential individuals or organizations to get political support.

The main goal of advocacy planning in several groups has been to help low income people have their interests recognized. Although Paul Davidoff's¹⁷ view is directed to a republican and democratic way of viewing city development (one in which many alternative plans are presented to the community as their possible futures), his advocacy planning has weaknesses: like the expert planner, the advocate planner

cannot represent all of the individuals whose needs and expectations are to be fulfilled in design, because:

- a. The community lacks homogeneity.
- b. The community lacks common interests.
- c. The society is pluralistic in its goals.
- d. These goals are changing very quickly in parallel to the

development of technological civilization.

e. That level of the social system which has the lowest income is the still disadvantaged although the advocate planner is supposed to express its needs because the poor

- 1. Are unwilling to participate.
- 2. Have financial problems, loses work, money if he consumes his time in participation.
- 3. Read fewer newspapers than middle-income families.
- 4. Hear about fewer programs.
- 5. Join fewer organizations.
- 6. Know less of, and therefore care less about current problems of the community or the larger world.
- 7. Barely associates themselves with society.
- 8. Have no feeling of identity.
- 9. Think in narrow and short terms.
- 10. Not informed by the designer of the later stages of the participatory design process, (discontinuity of contact between the designer and the user).

f. In case that the poor tenants live with the property owners in the same neighborhood, the conflict of interests will arise.

g. Identification of community interests as in the case of Roxbury Community Committee which ranged from white to negro to gypsies.

h. The advocate planner limits himself to the treatment of easy issues only: like housing.

i. The advocate planner is supposed to be manipulator only, but he cannot be totally neutral while helping the community interests identifiable and clear. His technical help might shape the solution unawaredly in definition and clarification of the terms.

The main argument in the advocacy planning is that the plan is the embodiment of particular interests; therefore, the group having the interests at stake in planning should have their needs expressed. That there is no best single solution but there is the notion of general welfare makes advocacy-planning pluralistic planning.

Today the social progress puts expertise on areas of public policies while before, politics was the main decision-making mechanism. Although, in ancient cities, city planning was a function of small groups and families and was in form of private actions within a limited network of public intervention, now the scene of modern cities is much more complicated; the urban problems are wide-spread, due to the geographic distribution, and the techniques are too sophisticated even for relatively the well educated citizen to follow.

The advocate planner is supposed to evoke issues to express the needs of low-income people in the community to establish a consultant-client relationship. Such a relationship, Urban Planning Aid, tried to form with Lower Roxbury Community Committee, to design a projected

campus high school in Boston.¹⁸ As a first step, Urban Planning Aid assisted the local group to collect information on people's wants and needs for the improvement of housing and the community. The second step was to hold community meetings. But in both cases, the active members of the organization were not the economically poor. In other words, the expected active support of the majority of people living in the area was not achieved. Although Urban Planning Aid aimed at defending the interests of local people against Boston Redevelopment Authority, people looked upon Urban Planning Aid as an outsider as they do upon all organizations.

Advocate planner has no administrative power. Nevertheless, his job is to form a natural client relationship in a community organization. But no confirmation of ideas is obtainable in a neighborhood due to the physical and social characteristics of territories.

Another issue in advocacy planning is the number of adequate representatives, the need for a representative organization arises because urban slum does not have institution by which it might represent itself as an entity. Therefore, people might be paid to become representatives of their type. Still, this does not mean that the neighborhood will be harmonious.

In case that the advocate planner cannot be successful in forming community organizers and articulate, clarify and resolve the issues, he needs to go to the poor and interview. However, this type of participation is not a real participation: in the first round, it is not possible to get a meaningful set of opinions. Only after a long process, when

people are stimulated, will they consider new alternatives.

The efforts to organize users into design process are increasing. Besides the works of Urban Planning Aid, Federal Republic of Germany, the Interior of the State Nordrhein-Westfalen¹⁹ issued a decree in 1971 that the planning of new urban centers should consider the needs of the people concerned; therefore, new procedures should be put into action to find out about those needs.

However, at present the gap between the user and the designer still exists: The gaming and simulation techniques are insufficient to fill it. Still many problems are unsolved and many people are unhappy. Participatory planning is not yet a systematic procedure or method. Much needs to be done before it becomes a workable tool. As Gary Moore says,

An order line of work on advocacy and participatory planning continues. Development of this approach has been due to awareness of the multiple interest groups affected by most urban problems, each group with its own perception of what constitutes the problem and each with their own value heirarchies, plus a concern, not so much for designing for people as designing with people, i.e., getting various user groups, community groups and professionals involved together in the design process. Most recently this approach has led to the development of approaches and procedures for citizen participation in actual problem solving process.²⁰

Up to now citizen participation has been just choosing among alternative plans as preconceived by the planner. The position of the planner is more of creative rather than being manipulating.

Peter Stringer and Maureen Taylor²¹ share the view that people can differentiate local plans and make quite sophisticated evaluations.

Their concept is supported by the general attitude of the coming post-industrial age. Industrial societies put great emphasis on expert views. In the coming post-industrial age there is an increasing concern that decisions should result from the process of participation between the experts and laymen. Consequently, some professionals have changed their roles from traditional expert to advocacy position.

To allow users to participate in design problems is a problem itself. It has got some difficulties to be resolved if the designers are to have a more responsible attitude towards people. For the design to meet the social needs of people, the designers have to discover what people want and how their design decisions affect others.

First stimulus of user studies came from the administrators. They wanted to know if the policy aims were being fulfilled or not. In traditional approach, the basic need was very important. To fulfill them no market research techniques were needed; instead, a set of established criteria within the limits of budget would provide the most fitting product. The present user studies are research oriented: user response to certain design is investigated as well as the user needs and priorities of needs.

However, the success of user researches is not proved to be complete. The fact that the commissioning client is not the same as the user client in most of the design contracts is one reason for its failure. In user research, an effective communication between the designer and the actual user cannot be obtained to make explicit the demands, needs, and values of each. For instance, the need for flexibility in

dwelling has been felt by some researchers and designers for some time. Although the research results show that the same need is felt by individuals also, the public sector tenants have not expressed their demands of flexibility explicitly. To have the communication between the people, and researchers and designers, the two poles of abstract research and practical life need to be balanced.

Self-Help

Another approach to include users in design process is limited to housing, self-help housing. The goals of self-help housing are:

- a. To have the user's own contribution to design.
- b. To perceive housing as a process of personal service as opposed to an institutionalized product of impersonal public and private entities.
- c. To perceive housing as an image of social security.
- d. To perceive housing as personal fulfillment of personal needs.

The self-help housing bears a great impact on the user after the design product is in use. "The level of tolerance to put up with undesirable consequences in housing or other services is proportional to the level of participation in the decisions, and therefore, there should be more participation."

In order to have an efficient self-help in housing,²² the production of housing resources must be non-hierarchically structured. Even so, the freedom to build, as implied by the attitude is misleading

because the users don't build for themselves, unless they are builders or architects.

The motivation for self-help system originates from the barricades which are built by people who moved from country to urban settlements with the urban economic movement of the industrial age. The inhabitants of barricades are dependent on the city economics. The predominant characteristics of barricades is their collective nature. Self-help has started in building barricades because it is impossible for their inhabitants to participate in the housing market. In short, self-help has created itself out of a forced situation. (Figure 1).

Of course, it should not be expected that all the housing problems be solved through individual or local self-help. Decentrally organized institutions have to have their own supply and production of housing resources. To obtain such institutional involvement in obtaining urban services such as schools, roads, water, security; the government should take the initiative through supplying the capital and expertise. Then the individuals can be encouraged to maximize their self-help activities.

To have a socio-economically effective self-help, the present development processes must be changed. The existing economic domination should be replaced by a new social order which will allow all the population to participate equally in creating its own future. Only then can the residents have the responsibility for taking the consequences of their decisions and at the same time, a certain level of standards can be achieved.

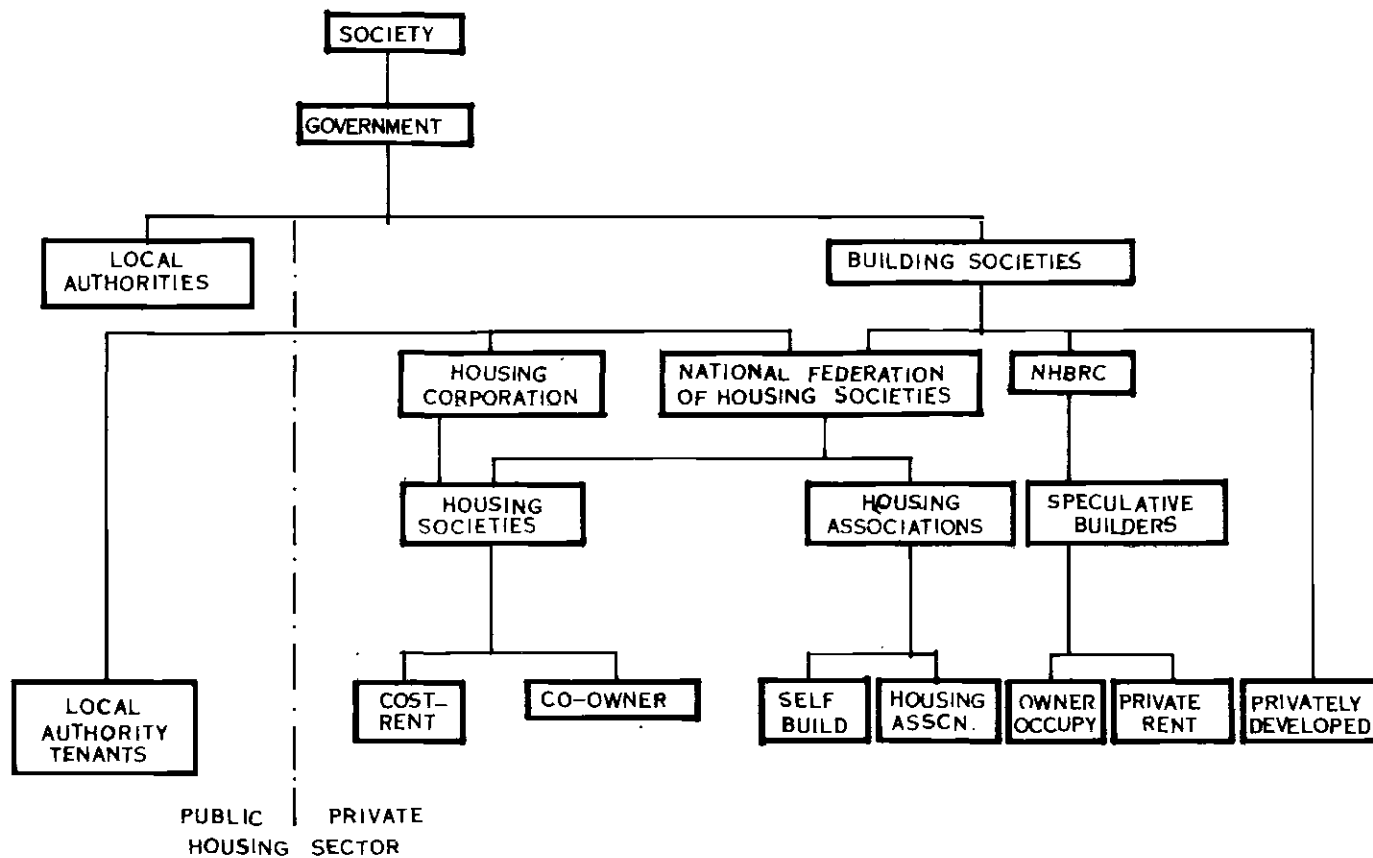


Figure 1. User/Client Hierarchy

Community Design Centers

To encourage and stimulate the collaboration between the community and the funding agency and the programming agencies, Community Design Center has been helping especially the poor since eight years ago. Community Design Centers were founded in 1963-64 to respond to the desire of the legislatures to involve citizens in the development of their community. The focus was the client, who needed professional assistance. The knowledge and implementation was to be provided by some means. This gap was then filled by early Community Design Centers like the Watts Urban Workshop in Los Angeles, Architecture 2001 in Pittsburg, the San Francisco Community Design Center which was later changed to Community Development Center, the Philadelphia Architects Workshop, the Architects Renewal Committee in Harlem and the Harvard and Massachussetts Institute of Technology Workshop in Boston.²³ Since last year many more have begun and many more have failed.

The main reasons for the slow development of Community Design Centers are following:

- a. The nature of the architect's and planner's role in the community development work is not clearly defined.
- b. Among the professional occupations, architecture and planning were the last to get involved in the poor people's environmental problems.
- c. Expertise failure.

To compensate those lacks, Community Design Center has aimed at involving the client with the maximum scope in every phase of the design

development process; the technical phase, programming phase and the funding base. The criteria of the project are the needs and desires of the clients. Community Design Center helps funding them to fulfill those demands. In its efforts to foster collaborative design in community development, to bridge the gap between citizens and the government funding agency, Community Design Center has found money for the citizens. So the citizens in realization of their own rights, and their individual and collective potentials would make their own choices of alternatives or generate their own projects.

Although at the start, Community Design Centers had been considered as non-academic programs in schools now the concept has become part of some schools like the University of California, Berkeley, University of Pennsylvania and Massachusetts Institute of Technology. This stems from the belief among some students and leaders in that the architect's education is not adequate to make him an efficient change agent in the community. In this condition, the architect cannot help the clients, especially the poor to solve their environmental problems.

Here are the motivations for Community Design Center joint educational programs:

- a. In education, urban problems are not presented with their full scale.
- b. The student is shocked by the interdisciplinary involvement if it is not experienced during the educational period.
- c. Behavioral sciences like sociology and psychology are not taught in relation to physical environment.

d. Programming and design are taught in a limited framework in education.

e. Probably the most important of all is that the direct citizen involvement and the user contact is not studied or provided. Therefore, the client's needs are isolated from the architect's or designer's world.

Community Design Centers work on small scale projects and follows them through their completion so that there is no interference of the funding agency with the community participation in making design decisions. Even one renewed house may have a very strong and catalytic effect on ghetto residents if citizen-involved change takes place. It helps the poor in the ghetto to be hopeful about the future of their community. Urban Planning Aid in Boston is one example which supports the community. In this regard Community Design Center members are meeting with community leaders, city officials and other types of clients.

The funding of Community Design Center has been very inconsistent due to the lack of support by rich institutions or individuals like Carnegie and Rockefeller.²⁴ Their refusal of support is based on their dislike of the coarse issues, which are real. Even American Institute of Architects has not supported Community Design Center to be funded by the government until late 1968, when it was accused of being racist and elitist in its policy.²⁵

Still, Community Design Center has to solve its problems: the distrust to institutions by the community for four hundred years is difficult to ignore and overcome. Some people still think that the architects getting involved in community developments aim at gaining

clients before they shift from Community Design Centers to their own firms. Community Design Center is not the last determining agency for the implementation of design projects. As community developments evolve and self-management grows; the political influence increases. Still Community Design Center aims at being the communication media between the citizens and bureaucratic officials.

CHAPTER II

IDENTIFICATION OF USER TYPES

The user types are the actual users and other design clients whose needs must be satisfied if the design project is to be constructed. For example, the other clients can be the local authorities or private or public enterprisers. Their demands are not necessarily the same as those of the actual users. The main difference of their interests is that the other clients have more general and long-term demands and goals, within the constraints of time and cost, than do the actual users. This "other" group should initiate the user participation by organizing the actual users to form representatives. Following that phase, democratic participation can take place in design process.

Before attempting to identify the user values, the designer has to identify the types of users to be affected by a design project. Below is an example of user classification:²⁶

Internal Users

Specifically Identified People Belonging To The Organization.

They are the people serviced by the organization. (e.g., customers of a bank).

Potential New Users External To The Commissioning Organization.

They are unidentified users, but by market research techniques they are assumed to be the users on probabilistic basis. (e.g., future users of an office).

External Users

Transitional Users Entering The Internal Environment. They are the users who pass through the environment but do not stay.

Adjacent Users In The External Environment. They are the users who are affected by being in the environment of the urban design system. (e.g., neighbors in the vicinity of a factory).

Users Utilizing The External Space Around A Design As An Environment. They are the users utilizing the environment for a useful activity. (e.g., public parks around the buildings).

Obviously the design system should attempt satisfying the internal and external users. A system is likely to fail which supposes that the internal users are the only real customers of the design system. Although no distinction need be made as to the priority of internal and external users, distinction must be made between known users and unknown users.

Known Users

They are the individuals who are present at the time the initial design is carried out.

Unknown Users

They are the individuals who are not present when the design is carried out and whose reactions and needs could be predicted on probabilistic basis through the study of analogy.

The problem is the possible identification of the unknown users not the known users; because the assumptions to be made by sociological analogy studies are only suppositions. They cannot be scientific in the

sense that only future may or may not prove their validity.

Lack Of Methodology For Identification Of User Needs

To March²⁷ the problems of the complex interaction between decision-making, social response and the citizen participation in the design process are far more important than the comprehension and development of the design process. Therefore, there is the need for planning methods which can handle the complexities of the needs and value systems of individuals or groups in terms of culture, economics and politics of their physical and social environment. It is impossible to determine the specific needs of each individual. The problem is the lack of dynamic models to represent the whole design process which has the parameters changeable by the user to generate various situations.

Actually the knowledge about the mechanisms which guarantee a just and active user participation is insufficient. Were it possible to create a laboratory in which the emotions of the individuals in the participatory environment could be created for the period, identical to that in real life, it would be easier for the architect to solve the design problem. He would know the users well enough from the experience of the profession not to start a new each time in each design problem.

Making the user part of the decision-making process has not been fully successful up to now. Usually the data collection process is not continued in the future. If the participation is to take place in the design process, the post occupancy evaluation has to be considered as the continuation of the participatory process. The researcher or the architect has to stay in contact with the user client; tell him clearly

the period of contact, and feed the data back to him so that the user can keep up with the process and comprehend its importance.

Let's hope that

"...for all development we've passed through stages of "identification and articulation" and are now approaching a time of "integration" wherein we will see greater collaboration between those concerned with the development of new design and planning tools and those dealing with the complexities of human behavior and desires in the physical environment."²⁸

Architect's Dilemma

The users not the architects should choose the participatory model themselves so that they can put up with the final effects of the final plan. The effects may be positive in the form of benefits or negative in the form of disadvantages. Although there is always the possibility that they may suffer at the end, they do not have the right to accuse the architect. However, if the participatory planner makes the judgement about actions, desires, motives and intentions of the users, he might make wrong decisions although he thinks that he is doing the right. Thus he is inevitably the target for blame by users; the responsibility he undertakes puts him in an immoral system as he makes the wrong decisions.

Variety of Users

Of course, to define the criteria for the "wrong decision" is very difficult. People's evaluation of decisions change with respect to time and scale. For example, it is usually the case that the people for whom the research is done are not the same group of people making use of the decisions as a result of that research. This group may have different values and interest and different needs from those of the initial group.

It is impossible not to agree to Manheim when he says, "Most critical aspects of environmental problems are diversity of opinions of different user and political interest groups."²⁹ All groups involved in the design process will have unlike values and needs than those of other users.

Change In The Values Of Even The Same User

The social, economic and technological structure of the environment that surrounds the user has its impacts on shaping and changing his values. Especially the design projects involving the knowledge of big technology are examples to this situation. For example, the inputs like technology and material going into the process of hospital design might change during the period between the time its program has been set and the time of completion, through a considerable number of years. Therefore, the requirements change, although the users--after the completion of design--might be the initial users. A similar situation will happen to every type of design if the scale is large and the construction period is long. The users may have different requirements when they work or live in a building, than they have had at the time when the program of the building has been prepared.

Representative Sample Of Users

The right representatives and an adequate number of user representatives are required if the design proposal is not to be based on incorrect facts. Choosing user representatives is a very important problem because the needs of the user representatives are not necessarily the true needs of the majority of the users.

Since the application of a design project creates order, at the same time it gets away from the individual's freedom of personal choice. The user interests have to be represented as correctly as possible to those responsible for controlling the legislation. Especially the problem arises in the design of governmental control systems in which the minimum user standards have to be established rather than the desirable user standards.

A small sample of users can be selected statistically from the entire population. If the sample size is too large it may be difficult to handle it. Still, sampling is useful in providing data for decision-making on the basis of a continuous user feedback.

Selection of user representatives follows the identification of user types and initiates the decision-making process through active user participation.

In obtaining optimum representation of the people concerned with the design problem the conflict arises between the statistical representation of the population and the small size of working groups. To implement active and efficient participation the size of the groups is suggested to be kept small. When conflicts arise "the magic number seven is often invoked."³⁰ However, how to enlarge the number of people for a wider participation becomes a critical question especially when there are many types of users involved in the decision process of a complex design system.

Lack of Communication: Absence Of A Common Language

The problem occurs between the researcher and the researched, mainly due to the difference in their backgrounds: the design values of the first is unlike the values of the second, such as concepts of work, home, life and community. Therefore, the planner cannot represent user's values; architect's perception of the environment is unlike to that of the user. Even an advocate for a community cannot adequately represent a heterogenous group of people in which the values and interests change from one individual to another.

Therefore, the values of the user group need to be transferred to the world of designer. The user might not know how to recognize his values; even if he can, he needs assistance to communicate them to the designer. The direct communication between the user and the designer is created either by designers and/or administrators and/or politicians. If one of those three groups becomes authoritarian, the user participation cannot be achieved because there is the need for power interchange between the groups involved so that the decision process can be viewed from the aspects of the interested groups.

Even if the users have one language in common, it might not be shared with the designers in the use of the language. The users may not explain their desires and interests clearly. Also, not every user can explain complex abstract situations equally well. Therefore, there needs to be a communication group between the community group and the institution to accomplish a client-user collaborative design.

In reality the architect should not be considered as a mere

building designer; instead he is to be perceived as a person who forms a desired interaction between man and environment. This is shown in Figures 2 and 3. The designer can develop a mediation between the users and the institution which officially implements the design. How he can become related to the users' construct system by neutralizing his own is one difficulty he must fight against in order that he can create a design to reflect their set of views. Another problem is how to combine the set of values when there is more than one user involved, so that he may put forward one overall representative value as design criterion. The fact that no techniques have been yet available up to now, to integrate the individual values of the users with that of the society makes the designer's task even more difficult.

The Concept Of The Architect Versus Simple User

Long believed concept of the architect as the king of creative world of imagination and intuition as opposed to the ordinary user of the real world, unless abandoned, will continue to create a problem because it makes a gap between the two worlds. The problem is applying the skills of the designer to a purpose to be benefitted by the human beings. Usually, the designer's motivation is against the participation because he wants to order and preserve the physical environment against change as implied by the user participation in design.³¹

Lack Of Interest

To stimulate the interest of the people in participation whose lives will be affected by particular design decisions is very difficult especially if the design system is in urban scale. People usually do

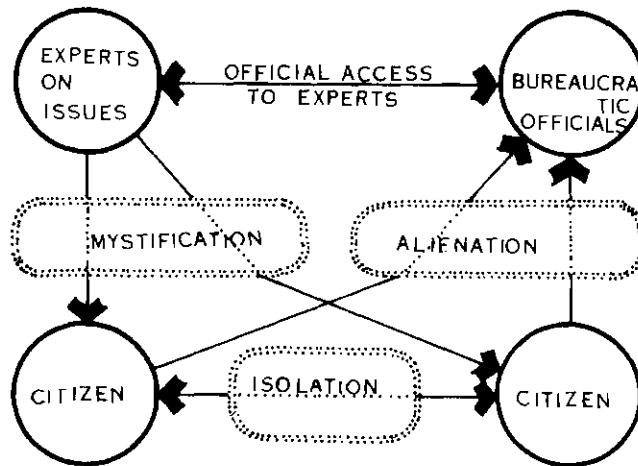


Figure 2. Descriptive Model of Current Citizen Involvement in Community Issues.

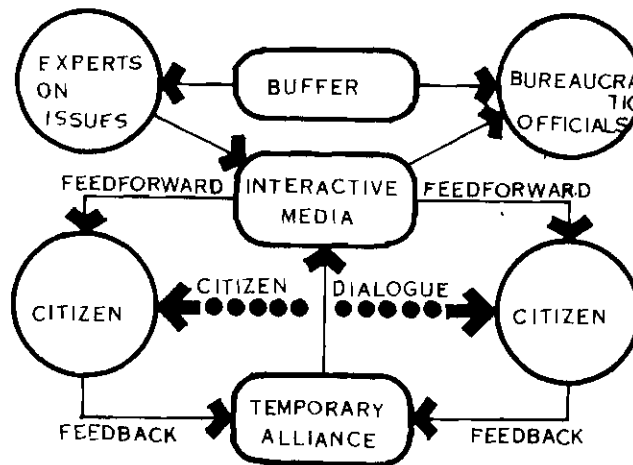


Figure 3. Citizen Involvement Through the Use of Interactive Media.

not or can not spare time for design participation. Surprisingly, although they seem uninterested in the issues concerning their lives, directly, they protest against the wrong decisions when they are activated or implemented. Another factor as a reason for their lack of interest is that the minority groups are difficult to draw into participation: their daily fight for living is constant. They cannot afford time and income to take part in the decision-making process on planning issues.

Possibility Of Ending Up With Chaos

If only few individuals in a community take leadership in the design process and become the leaders instead of the representatives of the majority of the community, no valid decisions can possibly be made. On the other hand, if all of the users become active and individualistic in their demands they cannot conform their needs with those of the others. In both cases no decision but chaos can be achieved to be benefitted by the community in design decisions.

CHAPTER III

EXAMPLES OF METHODS TO SOLVE PARTICIPATION PROBLEMS

Throughout the literature on Design Methodology, designer's main aim has been to reach the optimization. It is not easy or possible to say that one design method is the best of all or is better than another one because the environmental problems that each method apply to are different. Therefore, they do not have a common criterion.

The various methods and techniques discussed in this chapter are attempting to achieve user participation in design problems. Each method is to be viewed in its own context. For the sake of easy comprehension and comparison the format for each method is kept the same: in the order of key words, problem and method and conclusion.

ORGANIZATIONAL DEVELOPMENT MODEL

Joe a. Ouye and Jean-Pierre Protzen

Key Words

Change, commitment, mutual understanding

Problem

Obtaining a needed change

Method

Attitudes and value systems of individuals affect the socio-cultural norms and significant relationships. These in turn, when supported by the commitments of the individuals make up the patterns of action. Method is based on this principle.

Goal. To get a joint effort to determine the goals common to the change agent and the client, to form a voluntary relationship between the two types of participants, in which any one of them can terminate the relation freely; and to give equal opportunity to both change agent and the client to influence each other.

Application. Big business and government

Participants. Change agent and the client. Organizational developer is the main manipulator and educator.

Conclusion

Success. a. For the appropriate handling of the situation the essential relationship between the client and change agent is attained.

b. The resistance on the part of the client towards change is overcome through the sound relationship.

b. Instead of blind obedience through mutual understanding the client contributes to the change efforts of the change agent.

Failure. a. The use of its application is of large scale only.

b. It may lead to chaos.

Recommendation. a. The model needs to be applied to various scales of design problems for improvement.

COMMUNITY ORGANIZATION MODEL

Joe A. Ouye and Jean-Pierre Protzen

Key Words

Leadership, community, organizer

Problem

Seeking a social mechanism to cause an extensive participation in community life.

Method

Goal. To achieve a level at which people other than elected or appointed officials or agencies of government can influence the decisions about the programs and policies which affect their lives.

Application. Certain conditions of community problems.

Participants. Community people and community organizer.

Conclusion

Failure. a. Conflict between the goals and the actions undertaken to implement the goals: the community organizer uses certain actions contrary to participation.

b. Community organizer appoints himself leadership thus, violates the right of others to determine for themselves.

c. Ambition to play the role of the leader is against the concept of participation.

Recommendation. The model should not be used unless other methods are not applicable to a particular situation.

ARGUMENTATIVE PLANNING MODEL

Joe A. Ouye and Jean-Pierre Protzen

Key Words

Argue, symmetry of ignorance, resources

Problem

Developing the maximum participation to bring up maximum possible knowledge.

Method

Goals. To use participation as a means to create a world which nobody plans for others.

Application. The model is realizable only if the participants are willing and skilled enough to partake in an argumentative process. Also they should have the sources of time, money and expertise support that they can use in participation.

Participants. Argumentative planner and the community people.

Process. Meetings are held in which goals and means are discussed.

Conclusion

Success. a. By principle of symmetry of ignorance nobody can claim that his knowledge is superior to others. Therefore, he can not impose his views on others.

b. Argumentative planner does not ask for behavioral changes in the participants.

c. Argumentative planner does not attempt at uncovering the participants' lives.

d. Although argumentative planning may have some practical problems, it is the most just among the three models discussed till this point.

Failure. a. Impossibility of correcting the views of those participants who doubt about the argument.

b. Some participants may end up with more power on decisions at the end of the argument.

c. The difference between the participants in their ability to think and argue and handle their knowledge affects their effectiveness in the decision-making process.

d. Greater the number of participants the more conflicting interests arise and the more effort and time is needed to reach decisions.

e. If the argumentative process fails; it is not democratic anymore because either the user of the model will quit or try another model.

g. Unfortunately it is usually only the upper middle class participants who have the resources to participate in neighborhood planning decisions.

h. The model does not function well without the support of the planning information systems.

Recommendations. a. A mechanism needs to be developed to support the minority in the argumentative process.

b. The lesser skilled should be aided by additional sources.

DESIGN SYSTEMS FOR EFFECTIVE USER DESIGN PARTICIPATION
IN URBAN DESIGNS: ORGANIZATIONAL SCHEME

John K. Page

Key Words

Participation, internal, external environment.

Problem

Finding a large system to communicate various user activity spaces of internal and external environment. The system needs to be flexible for the users to experience change in their environments in future.

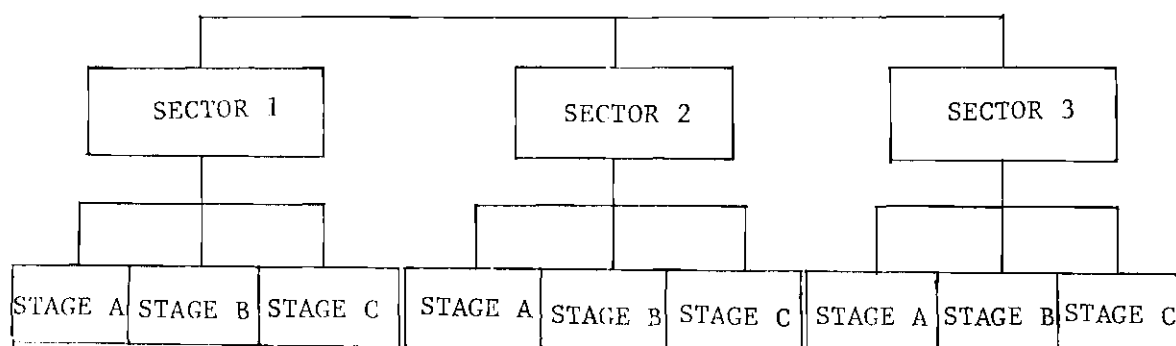
Method

Goal. To attain user participation in the design of government control systems to get the user interests as accurately as possible, and to involve the public in the design decisions effectively and directly.

Application. Urban design systems.

Participants. Internal users, external users, people who will be affected by particular design decisions.

Process. It can be represented diagrammatically as follows:



SECTOR 1. User Participation in the internal design of large urban systems.

STAGE A. Participation in formulating environmental performance standards.

STAGE B. Participation in determining the design proposal from internal users' point of view regarding the result of Stage A.

STAGE C. Participation in user assessment of completed designs-by internal users-regarding the results of Stage A and B.

SECTOR 2. Participation in the design of the external environment of large urban systems.

STAGE A. Participation in establishing the objectives of the external environment of the system and deciding the standards that it will affect.

a) Internal users who have to pass through the external environment.

b) External users of the external environment.

c) User of other systems in the external environment of the system.

STAGE B. Participation in suggesting the probable consequences of the design proposals on the external environment.

STAGE C. Participation in assessing the environment of completed design in relation to the results of the stages A and B.

SECTOR 3. Participation in design and operation of official control systems for regulating the external and internal environments of large systems.

STAGE A. Participation in formulating.

- a) Proposals for the design and operation of official control systems.
- b) Strategies and establishing control standards for official control systems.

STAGE B. Participation with the controlling organization in determining the probable environmental effects of the urban design system in consideration of the results of Stage A.

STAGE C. Participation in determining the actual effectiveness of the official control systems to achieve

- a) Acceptable internal environments for internal users.
- b) Acceptable external environments for external users.
- c) Acceptable external environments for users in other systems in the external environment of the system.

Conclusion

Success. a. Development of an effective time table for participation process for each design situation.

b. The users are in an anticipative action during their formation of performance standards.

c. With the agreement of the design sponsor or the client, the users of the system are in direct contact with the designer.

Failure. a. Users of other systems in the environment of the design system can communicate only indirectly and through official processes by the government.

b. Until the publicity takes place, the exact effects of participation cannot possibly be known.

c. Rapid response is demanded from the participants in Sector 1, State C.

d. The user reactions are not taken into consideration until after the next round of Stage B. Therefore, the user information can be too late to be inputted to the next design.

e. Since the stages are linked sequentially in each sector, unless the plan is modifiable, the resulting information from Stage C will not be valuable.

Recommendation. The process should be made public at certain periods during the process so that the user reactions can be more effective on the decisions.

TYPE PSYCHOLOGY AND REPRESENTATIVE CITIZEN PARTICIPATION
IN PLANNING PROJECTS-TECHNIQUES TO DISCOVER
TYPICAL INNER BEHAVIOR

Martin Krampen

Key Words

Democracy, behavior, statement, factor analysis, questionnaire

Problem

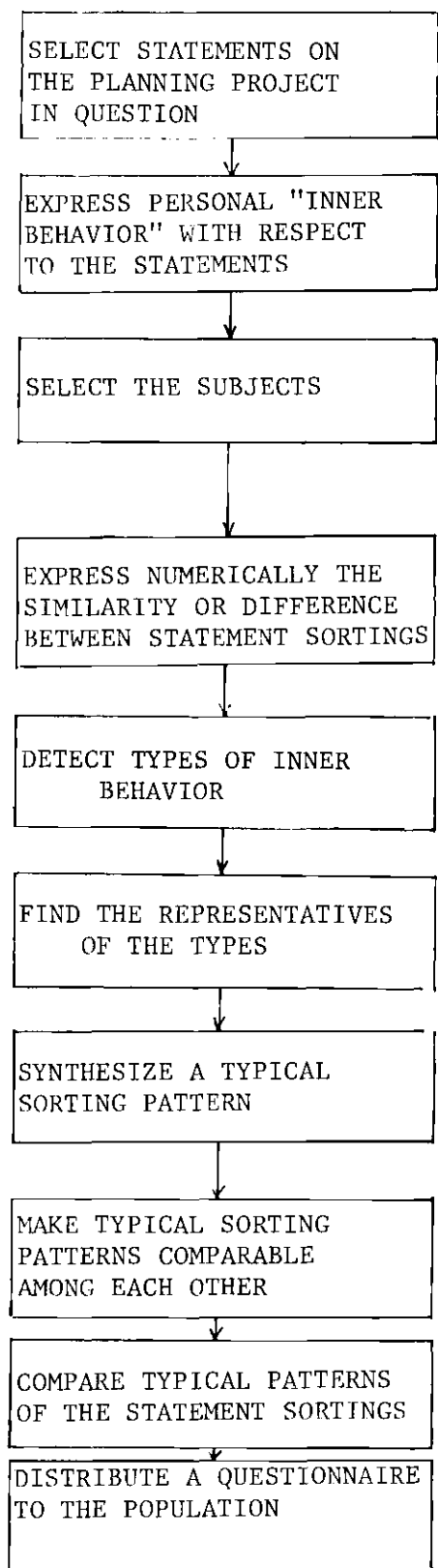
Democratizing the planning process because very little is known about the mechanisms which guarantee a just and active participation. Obtaining an optimum representation of the people concerned is essential to make the participatory process effective.

Method

Goal. To find representative user types in a population. By type, what is meant is inner behavior toward a problem or an issue. Hence, the goal is to discover typical inner behavior with respect to a planning project.

Participants. Representatives of a certain number of inner behavior toward a planning will be the participants of the planning team.

Process. The steps and sources can be followed on next page.



Steps

Sources

PLANNER OF THE PROCESS:
INTERVIEWS WITH POLITICIANS
OPINION LEADERS, OVERHEARD
CONVERSATIONS

PEOPLE DO IT BY RANGING THE
STATEMENTS ON A LINEER SCALE
HAVING TWO BIPOLAR EXTREMES:
STATEMENT APPLIES TO ME
PERSONALLY AND THE REVERSE

PLANNER OF THE PROCESS:
CHOKER CRITERIA: MANY
CONTRACTS: (Example-OLD
vs. YOUNG, MAN vs. WOMAN,
RICH vs. POOR)

PLANNER OF THE PROCESS: FINDS
30-40 SORTING PATTERNS BY COM-
PARING EACH PERSON'S SORTING
PATTERN WITH OTHERS. (30-40
POEPL)

PLANNER OF THE PROCESS:
BY FACTOR ANALYSIS, TYPES
OF PERCEPTIONS, FEELINGS
AND THINKING

PLANNER OF THE PROCESS: USES
DETERMINENTS OF AGE, SEX, SOCIO-
ECONOMICAL AND OTHER MATERIAL
VARIABLES

PLANNER OF THE PROCESS: GOES
THROUGH A SERIES OF MATHEMAT-
ICAT OPERATIONS AND USES A
FORMULA

PLANNER OF THE PROCESS: SOME
METHHEMATICAL STEPS

PLANNER OF THE PROCESS:
CRITERIA" COMMON MEAN IS
0, AND (+) AND (-) USED
TO COMPARE THE PATTERNS

PLANNER OF THE PROCESS: THE
AIM IS TO LET LARGE SAMPLE
CHECK OF REJECT EACH STATEMENT
DETERMINED BY THE TYPES OF
ATTITUDES TOWARD THE PROJECT.

Conclusion

Success. a. The assumption is made that a set of given inner behaviors toward a specific problem may represent a large proportion of the population; but there is always the possibility of not representing the remaining percentage of the same population. By this technique, there is the possibility of getting the opinions of various people with many social and demographic contrasts.

b. Large number of groups get involved.

c. Quick and inexpensive result.

d. It can be used to favor the socially underprivileged people in the society affected by the project. Therefore, the technique has flexibility of use.

Failure. a. The poor people who have the class consciousness in the society might not express their inner behavior toward a project unbiasedly and honestly.

Recommendation. The planner of the process might consider the results accordingly and put few statements for the expression of the same inner behavior to solicit a correct response from each individual participating.

METHOD IN PLANNING AND DESIGN WORKBOOK
FOR COMMUNITY PARTICIPATION

Charles B. Zucker

Key Words

Community, education

Problem

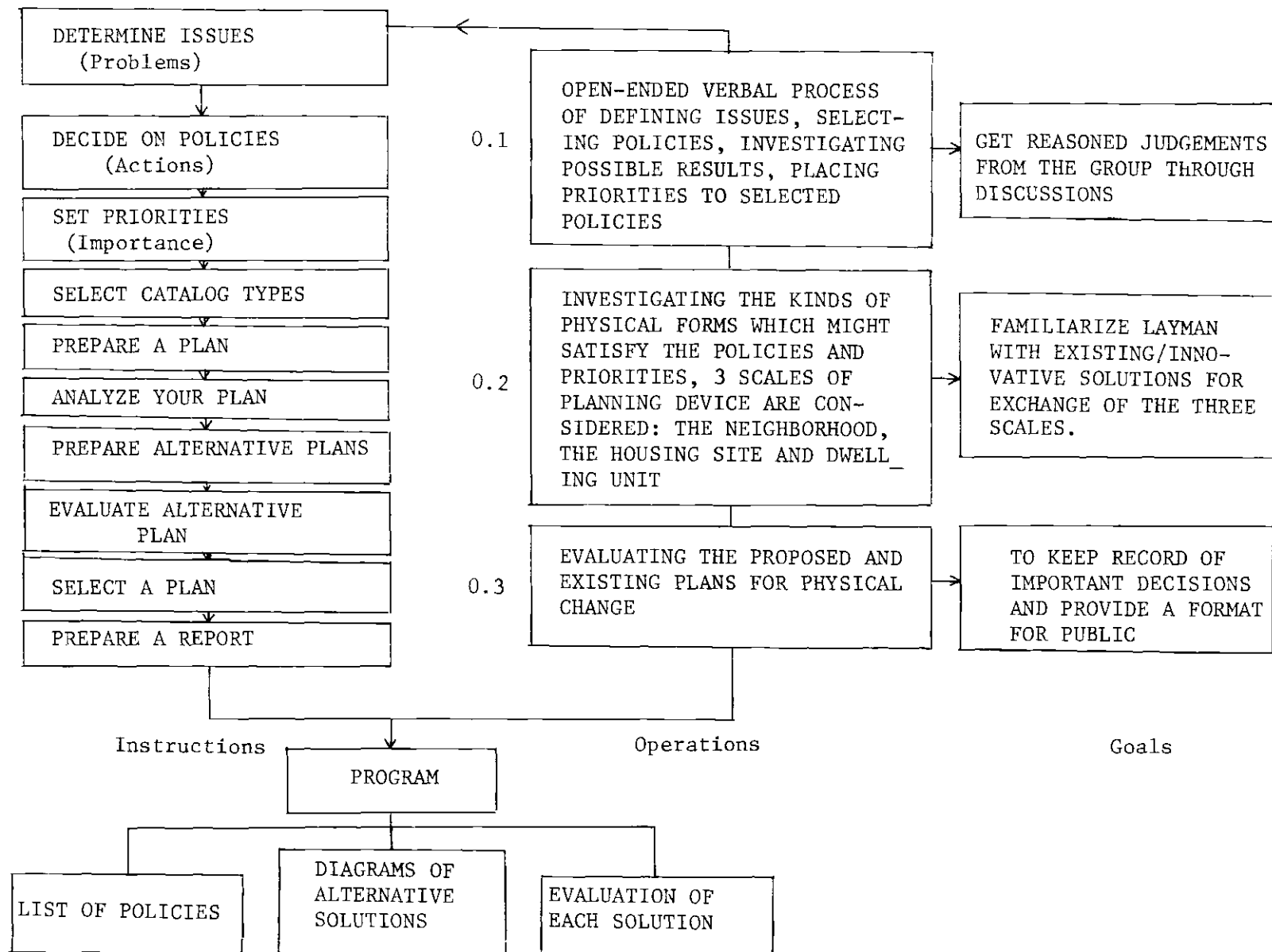
Enabling the user groups to discuss the policies for the choices they make and to evaluate the consequences.

Method

Application. Areas of education planning; park and recreational facilities planning; and evaluation of publicly financed buildings.

Participants. Planning Committee, Board of Education's Advisory Committee. Core was nine members, and there were six other people voting from other community organizations.

Process. In principle it consists of various meetings in which ten instructive steps and three operations are embodied.



Few meetings were held and seventeen issues were raised and policies were selected. Then the alternative distribution of students and facilities were generated which was followed by alternative proposal offered by the participants through the use of magnets, as shown in Figure 4. Planning policies and finally three solutions were selected as indicated in Figure 5. Afterwards, a report of issues, policies and diagrams of the three proposals were written and drawn. Also, an appendix of 300 pages recording the period of meetings and working documents was prepared.

Communicative Media. A cardboard having dimensions of 30" x 30" in two pieces was prepared. The participants could move the flat pieces of rubber coated magnets of various shapes to get alternative solutions on the street map, public land map and land use map. Thus, various arrangements of school activities such as regular teaching, special teaching, recreation, eating, administration and transportation are obtained.

Conclusion

Success. Although it was difficult at the start to initiate laymen to work with highly technical material, as the process developed from the issues to the evaluation, the method worked.

Failure. The components parts of the neighborhood school issue was too complex for the pro neighborhood advocates.

Recommendation. The method may work well if the issues are to be expressed in simpler terms.

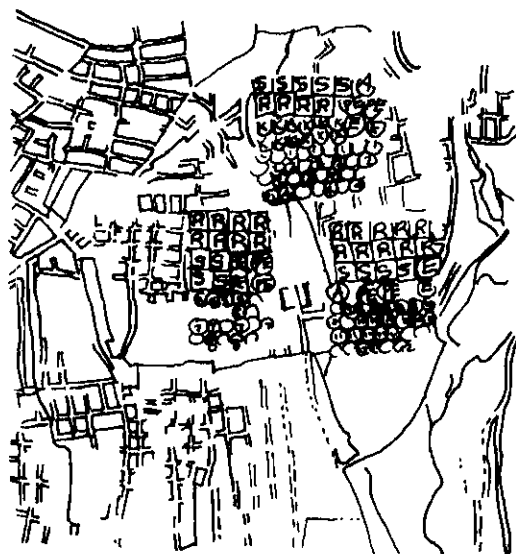


Figure 4. Activity Categories

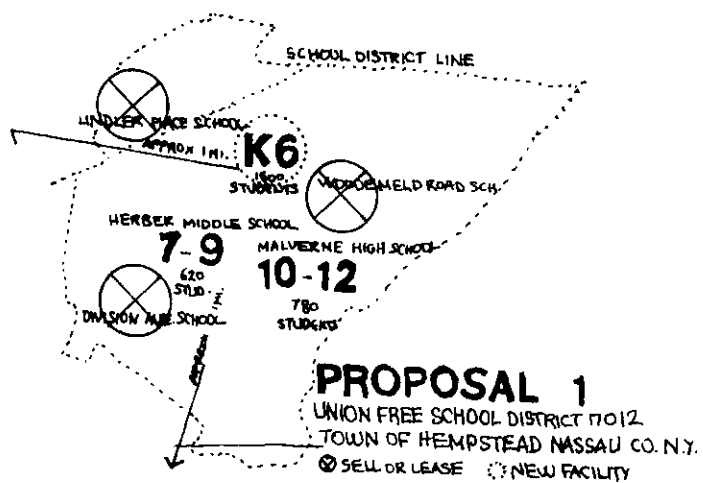


Figure 5. The Approved Proposal.

VALUE THEORY AS A VEHICLE FOR USER PARTICIPATION IN DESIGN

James N. Siddal

Key Words

Value, conscious, subconscious.

Problem

Defining user values correctly in a design process and communicating them directly to the designer. Two aspects of the problem are combining the user's values to give overall measure of value and combining the values of users when there is more than one user.

Method

Goal. To suggest the behavioral sciences develop techniques to help the user find out his own values, both conscious and subconscious, quantify those values, and integrate them with those of the society and communicate them to the designer. Depth research technique adapted from marketing field cannot prescribe values of design because:

- a. The user is passively analyzed.
- b. The technique can deal with only the preconscious or middle conscious layer of conscious values.
- c. The tool cannot fully determine the values of the user.
- d. The possibility that highly educated people realize the intent of the interviewer and reject him.

Conclusion

In order that the value theory can be used as a participatory tool, the user must have an understanding of design process and

engineering to some extent.

Recommendation. Study of engineering must be part of cultural education.

OPERATIONAL GAMES

Alberto Feo

Key Words

Community, sessions

Problem

Developing and evaluating alternative strategies in case of conflicting socio-technical situations between communities and other organizations.

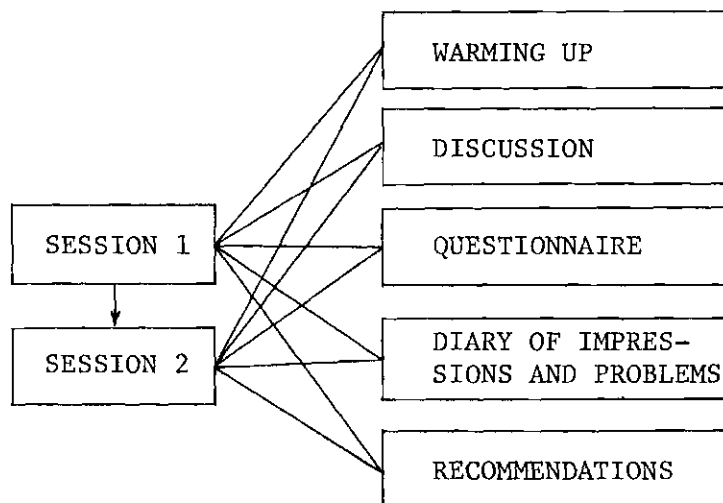
Method

Application. First case was the problems of increasing number of children drowning recently and the smell, fly, and rat problems caused by a ship canal called Rochdale Canal. The effort of the inhabitants of the area to work with local authorities in order to make the area safer and healthier did not work. Meetings, protest marches, proposed schemes could not prevent the drownings. In the second case, there was a conflict between the local authority and the people of Hattersley Community to the east of Manchester: the local authority's schemes of expanding an existing minor road to a large motor road were not approved by the inhabitants because the actualization of the schemes would result in dividing the center of the community into two areas. The solution suggested by the community was to change the route of the road.

Participants. Community, institution, controller of the functionings.

Communicative Media. Radio, television, telephone, newspaper, mail were used to communicate with the community.

Process. Sessions were held with each problem group and were recorded by notes and tapes. Maximum period of each session was three hours.



Conclusion

Success. a. People who are inexperienced of a socio-technical problem still can help in exploring the problem.

b. It is a useful method in the area of community work, community organization or community action groups.

c. It is useful in solving conflicting situations in planning as an evaluation tool of policies.

Failure. a. Still it is not an adequate tool for the community in exploring the alternative futures of their socio-technical problems.

b. It is implemented by an experiment group only. Therefore, the possible results of a real problem situation is not known or gotten to prove its usefulness.

Recommendation. The method needs to be applied to real-life problems so that it can be tested to be left aside, re-used or improved.

GAMING-SIMULATION: AN APPROACH TO USER
PARTICIPATION IN DESIGN-URBANISTA

Ignacio Armillas

Key Words

Cycle, gaming, simulation, flexibility.

Problem

Aiding the design by the participation of individuals of various interests and values to determine the objectives, strategies; to reach them and to evaluate the consequences resulting from a particular strategy.

Method

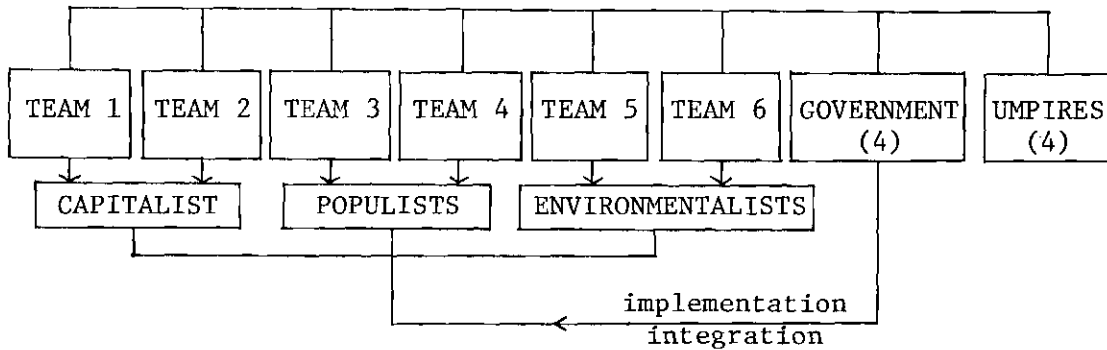
The game originated in urban design laboratory at the School of Architecture in Nova Scotia.

Goals. Capitalists: maximizing economic return on the invested capital, Populists: supporting human values; Environmentalists: increasing the quality of the natural and urban environments; Government Members: implementing and integrating six groups; Umpires: describing the state of game world and the effects of social, environmental, economic and political consequences upon urban context.

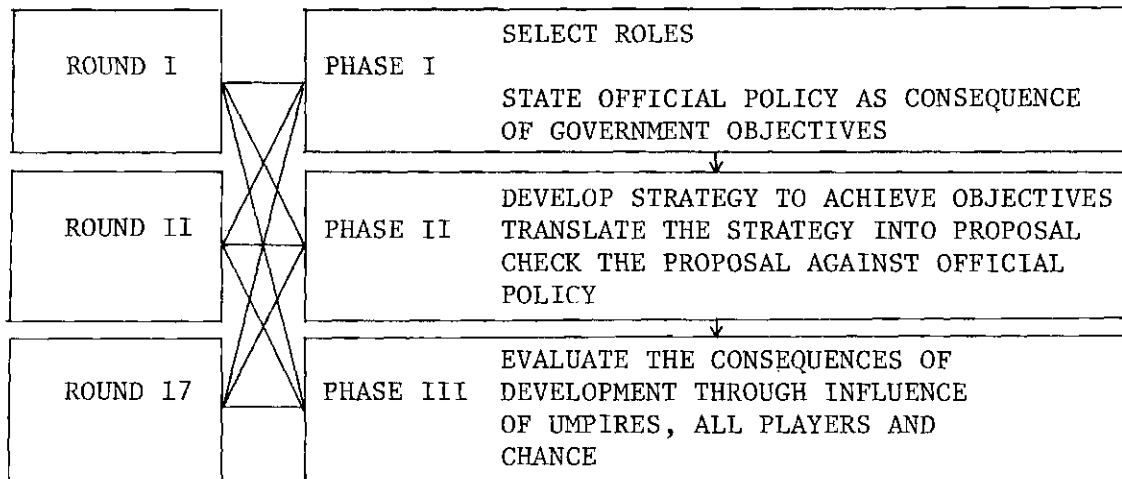
Application. The real case was to develop certain land on the fringe of Halifax, Canada as an extension of the city.

Participants. Students, staff members and outside guests.

TEAM STRUCTURE



Communicative Media. Game board to record all developments, maps, new forms.

Process

Conclusion

Success. a. Flexibility: change in player's intentions and objectives are considered as the situation evolves.

b. Every participant is considered in every round.

c. Individual groups of wide variety of interests are involved.

d. Interaction of various standards and values are obtained.

e. Enthusiasm is stimulated in participants.

f. It is adaptable to various environmental design problems; the scale may range from a single building to a new town.

g. Conservation of time and space was attained by reducing the real world into gaming.

h. Bridging the gap between user and designer can be achieved through gaming.

Failure. a. Phase II is cycled three times each round: it slows the process.

b. There is a necessity for mutual education and understanding of all parties.

Recommendation. Environmental education in early ages should be supplied before the method can be applied.

INFORMATION PROCESSES FOR PARTICIPATORY DESIGN-FLATWRITER

Yona Friedman

Key Words

Machine, man, repertory, infrastructure

Problem

Finding a hardware, infrastructure, capable of supporting an organization corresponding to any individual choice.

Method

Application. The method was developed for the World Exposition 1970 in Osaka to enable any future user of the buildings to write down his personal choices of plan, volumes and equipment.

Participants. Future user and the machine.

Communicative Media. Machine-keyboard.

- Process.
- a. Push one key to select the configuration of volumes.
 - b. Select the shape to correspond first, second and third volumes.
 - c. Select the equipment for each volume.
 - d. Select the orientation of self-designed flat. (These four steps are performed by future user).
 - e. Print the chosen plan. (Flatwriter I).
 - f. Select the finishes from the coded catalogue. (Future user).
 - g. Compute the price. (Flatwriter I).
 - h. Give the frequency of use of each part of flat. (Future user).
 - i. Calculate and print the corresponding "local effort" diagram. (Flatwriter I).
 - j. Make your preference of address within a given infrastructure. (Future user).

k. Check the admissability of choice on site, if correct, register the new choice in the memory, if not, warn the user to choose again.

(Flatwriter II).

l. Update and print new local effort values of new site and its immediate neighborhood. (Flatwriter II).

m. Present the corrected "local effort" diagram on the screen as superimposed on previous one to show the advantages and disadvantages of the last individual's choice. (Flatwriter II).

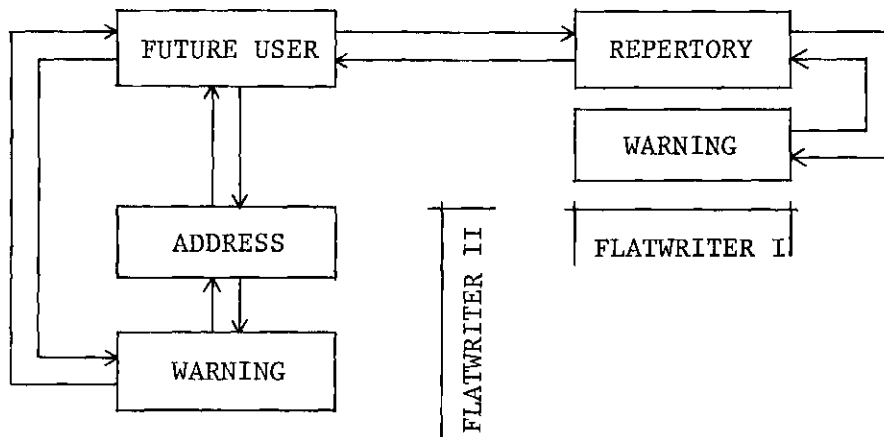


Figure 6. Flatwriter

Conclusion

Success. a. Variety of flats can be chosen: 200×10^6 different flats.

b. Flatwriter can be a visual language, a common media comprehensible by architect and any future user.

c. The risk to be undertaken by the future user due to the inappropriate decisions of the designer is excluded.

Failure. It is an expensive method and needs to be applied in many cases to prove its success to many problems before investment can be made on it.

A PARTICIPATORY PLANNING IN AN URBAN NEIGHBORHOOD

G. Hurwitz

Key Words

Urban, forum, interest groups, issues

Problem

Involving the goals and values of people who have been excluded from making decisions for long, in order to propose a historic district plan for Souldard. The means of solution was a participatory decision-making process to generate a general restoration plan and development plan, and offer a set of architectural standards.

Method

Goal. To get a set of mutual architectural standards out of the conflicting groups, and to reach an optimum solution to the conflict between preserving the diversity of land use defended by the community participants and deciding on a uniformly residential neighborhood defended by the city plan commission. There are five principles to the method:

- a. "Expert" decisions are not necessarily better than "lay" decisions.
- b. Due to the subjective values of the decision makers, design problems do not have the best solution.
- c. A design process can be very comprehensive if users are given the opportunity to generate the plans related to the environment they will live or work in.
- d. All participants should meet in an open forum.

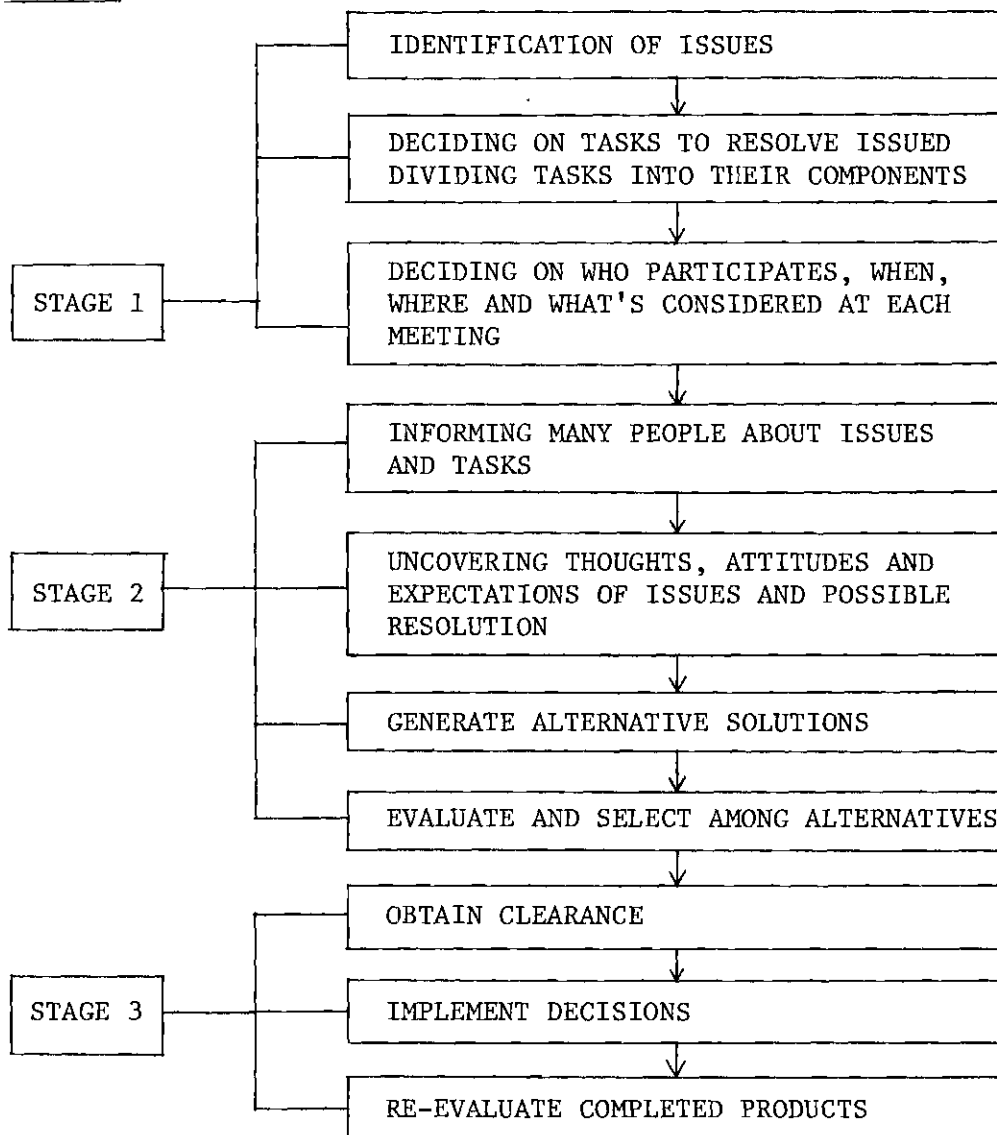
e. The users should be educated to plan for themselves.

Application. Soulard, an area of 240 acres within St. Louis City. The applicability of the method on political, social and economic aspects of a given area depends on user ability to handle and make decisions; user commitment to an alternative approach and designer's ability of role adaptation from a designer to a user.

Participants. Total number of participants was 200: all people living or working in the area could vote at the meetings. Mainly, three groups of people were involved: The Soulard Neighborhood Improvement Association, Restoration Group and Plan Commission.

Communicative Media. Forum; Eight meetings were held, each with a number of attendants ranging between nineteen and fifty-three.

Process



Conclusion

- Success.
- a. The resulting proposal of the participants passed into law.
 - b. It was experimented and found out that the participants could make complex and consistent decisions.
 - c. Forum worked for reconciliation of the decisions of two neighborhood groups having different views.

d. Two hundred people, most of whom are neighborhood users, had input on the process and the product.

e. The process helped the neighborhood participants to understand the planning process and the subtleties of the relationships involved.

f. The process helped the restoration group to review the problem from user's point of view, too. At the start, Restoration Group was supporting Plan Commission in redevelopment plan proposal. However, after the meetings they agreed to the neighborhood plan proposed by the Soulard Neighborhood Improvement Association, and defended it against Plan Commission.

Failure. a. One initial goal was not carried out; to develop a plan which allows the neighbors to remain in the neighborhood if they would like to do so. As a result, the poor people were replaced who wanted to stay.

b. Very poor people and the businessmen were not well-represented in the discussions, consequently, the decisions did not indicate input from them.

c. The assumption that all interest groups would be involved in the decision making process was not fully realized.

d. Larger factors; social, economic, and political, had more impact on the design decisions than the interests of the poor.

Recommendation. The method should investigate means to stimulate the poor to express their needs.

AN EXPERIMENTAL MODEL FOR MAKING DECISIONS

John K. C. Lui

Key Words

Goals, translate, task.

Problem

Developing design decisions and examining their effects on physical changes of the design proposals.

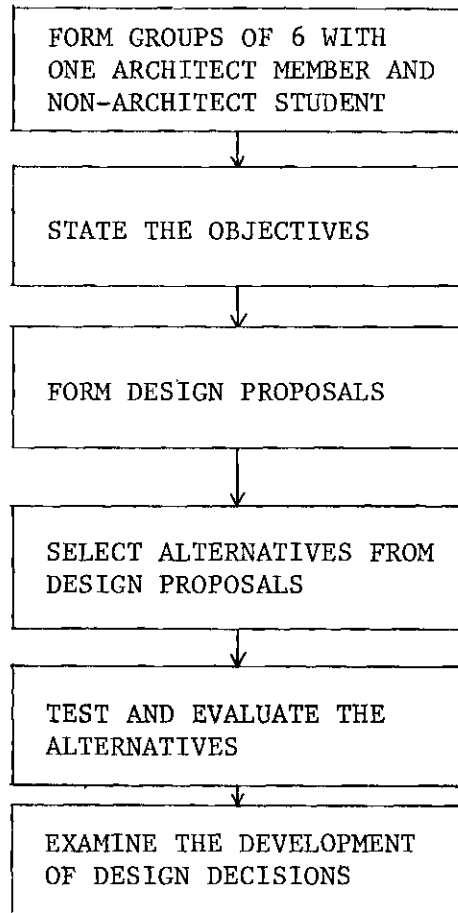
Method

Goal. To let the users make their own decisions because these individuals are rational in decision-making process. They tend to maximize their own utility.

Application. Designing a living unit of student housing.

Participants. Future users of the houses and architects. The client's task is to define goals and the architect's task is to translate these goals, and coordinate them into physical architectural forms.

Process



Steps

WEEKLY SESSIONS ARE HELD
ONE MEETING LASTS 1 1/4 HOUR
5 SESSIONS TOOK PLACE

GROUP DISCUSSIONS ARE HELD
UNDER THE COORDINATION OF
THE ARCHITECT. (4 CYCLES)

THE ARCHITECT TRANSLATES GOALS
EXPRESSED BY THE CLIENTS INTO
PHYSICAL FORMS (1 MAJOR PROPOSAL
A WEEK)

CONTENT OF EACH STATEMENT,
PERSON, SOURCE AND PREVIOUS
STATEMENT ARE RECORDED

THROUGH DISCUSSION, REVIEW
AND CRITICISM

FORMING FLOW CHARTS

Technique

Conclusion

Success. a. The real user becomes the decision maker by learning how to evaluate his decisions.

b. Having more than one meeting helped the users develop better alternatives: at the first session only one third of the issues came out. This indicated that if the decision maker is not given an adequate information, he will tend to do whatever is most familiar to him.

Failure. a. The values of the representative group may not be generalizable.

b. One of the groups was "others" and the other group was "future students"; even their values changed through the experiment.

c. There is a possibility of conflict between the concept of utility of each individual and that of the utility and social welfare of the community. The situation creates the problem of achieving and interpersonal value.

d. The role of the decision-maker's skill is more important than client's ability to state his goals.

e. The group did not have a knowledge of values: they knew what they did not want rather than what they did want.

f. Over time, the inconsistency of values was observed: in the experiment the value of privacy changed from less important to more important. This is shown in Figures 7 and 8.

g. The ends can easily be confused with means.

Recommendation. a. The decision-maker should be interested not only in decisions as ends but also, even more on the means of getting

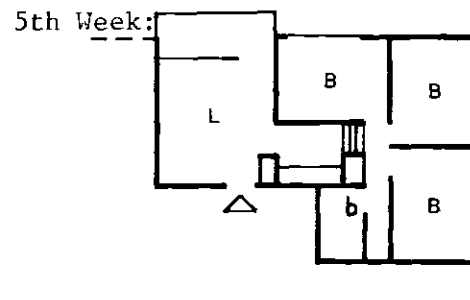
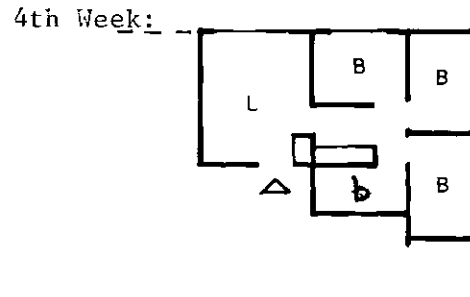
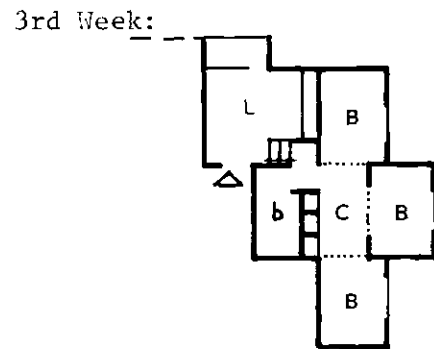
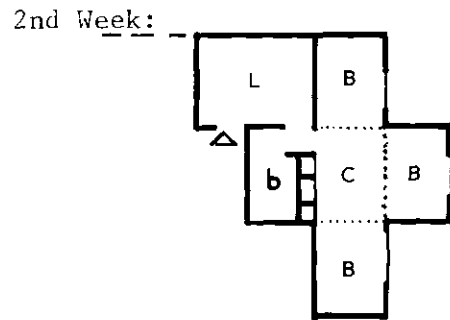


Figure 7. Participants from Architecture, Art, Pre-Med, Business, Elementary Education.

Figure 8. PROBLEM: To design a unit accommodating three persons including activities of Sleep, Snack, Toilet, Wash, Study, Play, and Entertain. It is not to exceed 3,500 cu. ft. in volume.

Scale: 1/16"=1'-0

to the decisions and plans. For example, in the experiment, utility room acquired value in the eyes of the group members independent of its goals; the people might not agree on its use but agreed on its existence.

b. The time span of the test cycles (sessions) must be the function of the nature of the problem environment, the scope of knowledge about the problem, and variability of objectives and values.

A PLAYGROUND: PARTICIPATION IN DESIGN

Hanno Weber

Key Words

Brainstorm, adults, playground

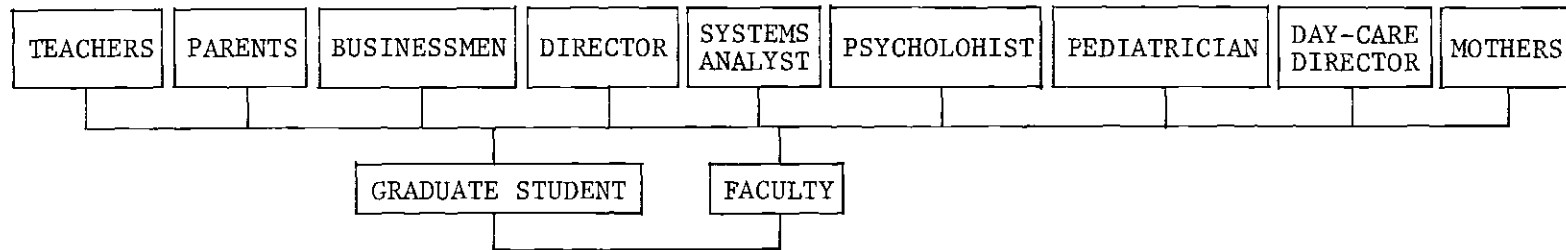
Problem

Trying to get different perspectives of people belonging to various social classes, ages and value systems in order to solve even simple problems concerning the community.

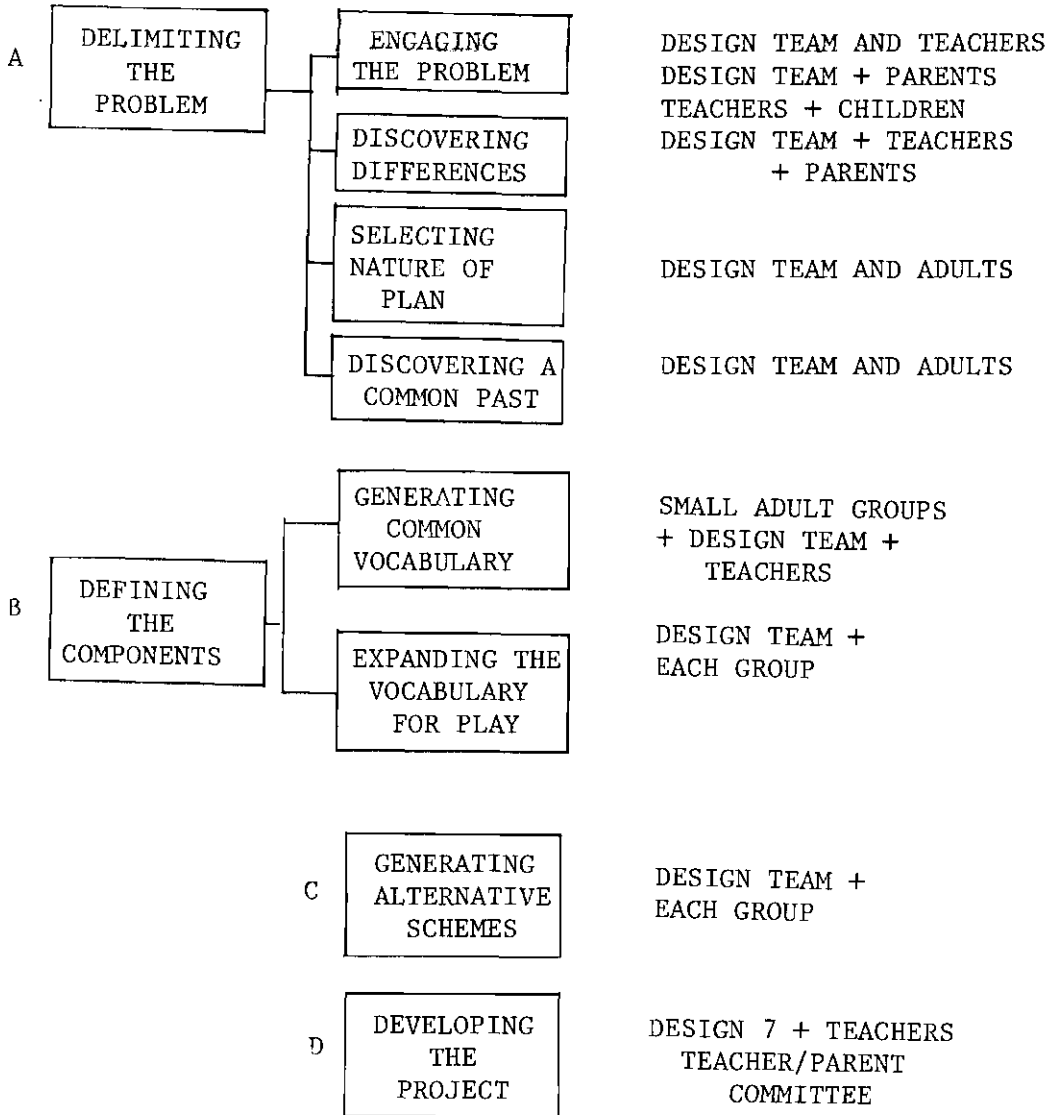
Method

Application. A playground of 100' x 100' in Washington will be planned.

Participants.



TEAM STRUCTURE

Process.

Steps

Team

BRAINSTORM	THE ROLE OF PLAY IN NURSERY PLAY GROUND	T: CHALLENGING P: SAFETY CLEAN- LINESS
BRAINSTORM	ACTIVITIES	CONTROL TO SOCIO- EMOTIONAL, COGNITIVE & PHYSICAL DEVELOP- MENT OF CHILDREN
SLIDES	TYPES OF PLAYGROUNDS	NATURALISTIC + SOME ADVENTURE JUNKYARDS
DISCUSSION QUESTIONS	PLACES/ACTIVITIES AND DANGERS OF PLAYGROUND IN THEIR CHILDHOOD	
BRAINSTORM	HOW CHILD CAN DEVELOP MUSCLE COORDINATION, DISCOVER NATURAL WORLD DEVELOP SOCIAL SKILLS	PLACES, ACTIVITIES EQUIPMENT TO FUL_ FILL GOALS
BRAINSTORM	OBJECT TYPES, PLAY ITEMS KEY CHARACTERISTICS	CHARTS OF ALTER- NATIVES
QUESTIONNAIRE GAME: DESIGNER SKETCHES TEAMS IDEAS FOR THEM TO REACT	PRIORITIES, SPATIAL RELATIONSHIPS, ANALYSIS	SELECTION OF ACTIVITIES, OBJECTS, SPACES ARRANGEMENTS (ORGANIZATIONAL SCHEME)
MEETING	DIVISION OF THE SELECTED SCHEME ITS COMPONENTS	EQUIPMENT DETAILS, SCHEME WITH ACCURATE DIMENSIONS: COST ESTIMATE + FINAL MODEL
Technique	Subject	Result

Results of meeting were exemplified through Figures 9 through 13.

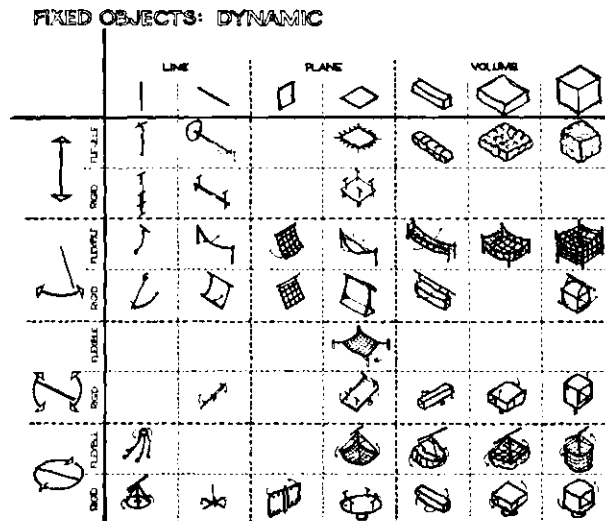


Figure 9. Fixed Objects, Dynamic-An Example To The Vocabulary Of Play.

ACTIVITY ZONE		FORM BUDGET CONSTRAINTS	
1	GATHERING & GROUP ASSEMBLY		
2	PRIVATE W/INFORMAL & HIDING	2	
3	ACTIVE ORGD GROUP PLAY	4	
4	PASSIVE ORGD GROUP PLAY		
5	ACTIVE BLDG & DIGGING	6	
6	PASSIVE BLDG & DIGGING	4	
7	GARDENING & NATURE STUDY	4	
8	CLIMBING & BALANCING ON FIXED OBJECTS	8	
9	CRAWLING & SLIDING ON FIXED OBJECTS	4	
10	SWINGING & HANGING FROM MOVING OBJECTS	4	
11	ROCKING & BOUNCING ON MOVING OBJECTS	4	
12	ROAMING FREELY ON VEHICLES	2	
13	MOVING/DISPLACING RESTRICTED VEHICLES	3	
14	ROLE PLAYING		

Figure 10. Activity Priorities.

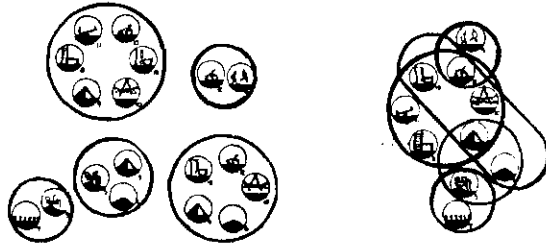


Figure 11. Combination Of Activities.

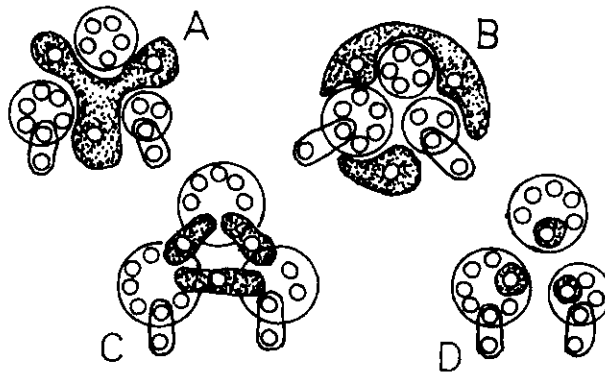


Figure 12. Sketching Alternatives.

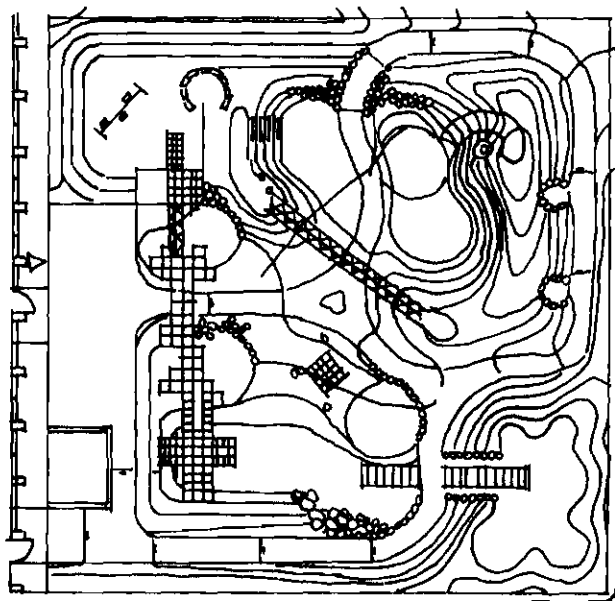


Figure 13. The Last Chosen Alternative.

Conclusion

Success. a. Although the playground was a difficult problem, the method applied to it helped soliciting the opinions of parents and teachers.

a. The method fulfilled its objectives.

c. Satisfaction on the part of adult participants was obtained.

d. In the playground solution chosen, a wide variety of places and activities were accommodated for the children to experience.

e. The participants developed an understanding of the design process with its difficulties and evolution by experiencing it.

Failure. a. The biases of designers could not be clearly defined nor controlled especially in synthesis steps.

b. Design team worked only inductively.

c. The first meeting demanded too much and too quick response from the participants.

d. Groups of sixteen were too big for brainstorming.

e. The assumption that favored the average of responses as the reasonable reflection of the judgements in a group was not necessarily true.

f. The problem reflected the opinions of only those participating.

g. The children's opinions were not reflected at all; therefore, the elements of spontaneity, playfulness and irrationality were lacking in the product.

Recommendation. a. The graphic simulation which two dimensional could have been developed to be more effective.

b. Display of the work could have been publicized for those who did not participate but who could be affected by the results of the plan.

c. Children who would be the majority of the users of playground should have been investigated into their needs.

A CONTEXTUAL DWELLING CELL MORPHOLOGY;
DISCOURSE FOR PARTICIPATION IN RESIDENTIAL DESIGN

Hanno Weber

Key Words

Topology, perimeter, dweller, graphic.

Problem

Involving the dwellers in a neighborhood in the inception, generation and development of their dwellings.

Method

Goal. To find a common language so that each participant may exchange his own point of view with that of others in discussions of particular design problems; and to enable people to debate pros and cons of an issue.

Application. Choices of any neighborhood dwellings.

Participants. Dwellers and designers.

Communicative Media. The graphic language: topological diagrams and abstract symbols.

Process. a. A collection of genotypes are generated where all dwelling interface alternatives are demonstrated in terms of their attachment relationship to other dwelling units in their perimeters. 37 Horizontal perimeter attachment alternatives are generated as indicated in Figure 14. Also, alternatives to show a dwelling which is superimposed and superimpose another dwelling, are generated. The result in Figure 15 was 36 vertical options.

b. The dweller participant can choose and comment on the alternatives so as to have input in decision-making.

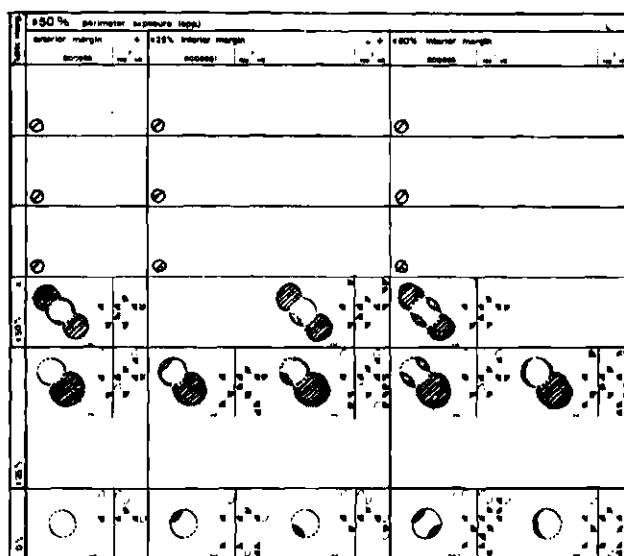


Figure 14. Fifty percent Perimeter Exposure.

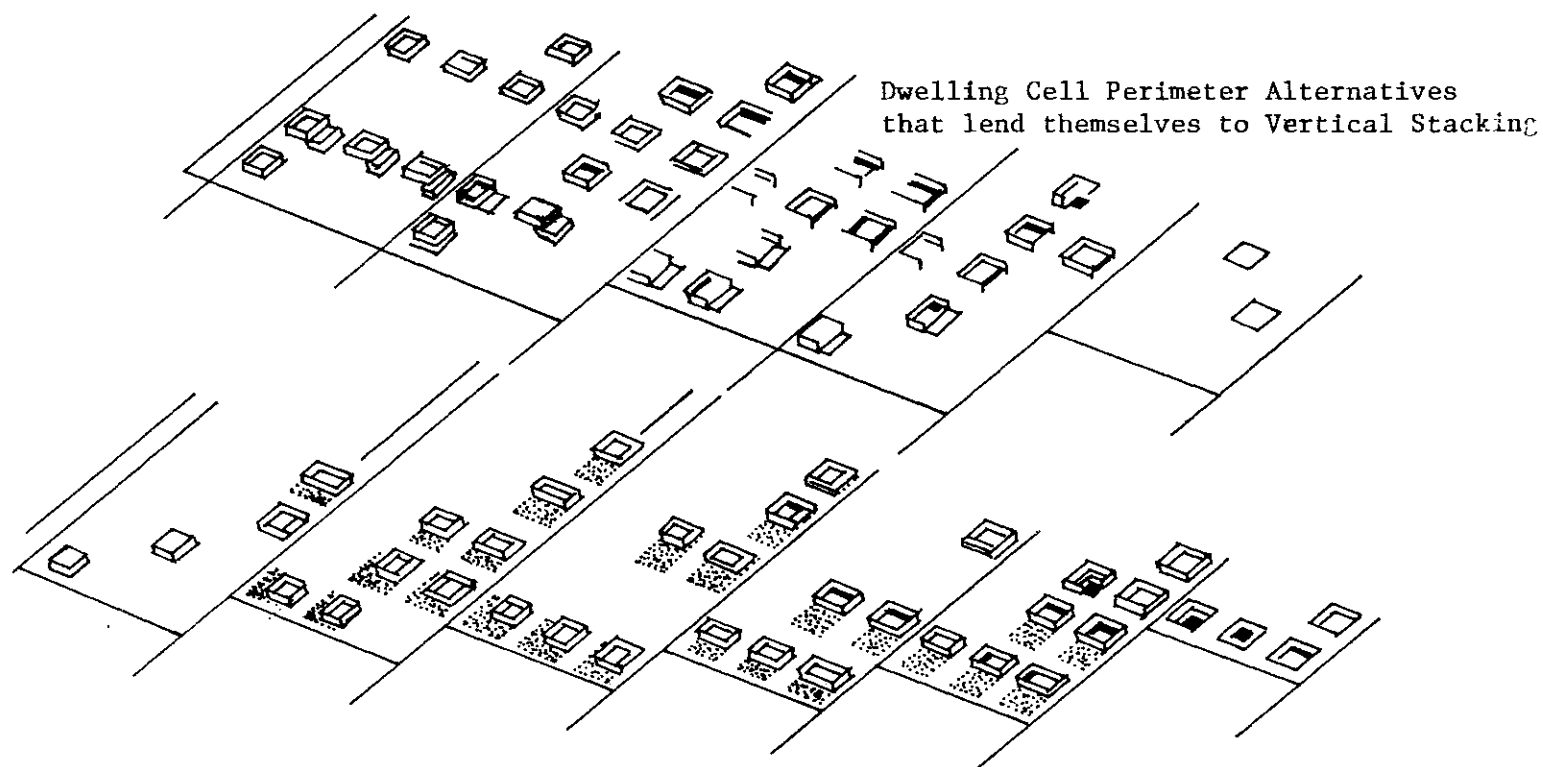


Figure 15. Dwelling Cell Perimeter Alternatives That Lend Themselves To Attachment To Other Dwellings At Any Part Of Their Parameter.

Conclusion

Success. a. Dwellers contribute to design decisions that will shape the environment they will live in by choosing from alternatives.

b. Designer too learns from the process in generation of variety of alternatives.

c. Although the dwellers' ability to conceptualize the spatial relations vary they can equally distinguish, classify the objects (in this context the dwellings) according to their typological characteristics.

d. Wide variety of options to reflect the values and needs of the dwellers can be generated due to the distribution, proximity and the nature and extent of the boundaries of the dwelling units.

e. Options contribute to fulfill the needs of the residents such as security, privacy and desire to participate in the world beyond the household.

f. Through this type of participation the dwellers realize their potential values and needs concerning their own lives.

g. Graphic options, if prepared appropriately, bring forth functional, symbolic associations, and infer consequences, and give the logic of the variables to generate them.

h. Design of dwellings is achieved with regard to the dweller's determination of perimeter exposure preferences by use of a common graphic language.

Failure. a. Communication takes place but it is initiated by designer's perception of reality rather than dweller's.

b. The method cannot satisfy all the pluralistic views in the society because people have and will have unique characteristics.

c. Participation in dwelling does not guarantee better dwellings.

Recommendation. Models more representational than the topological diagrams can be generated, such as three dimensional models.

AN ALTERNATIVE STRATEGY FOR PLANNING AN ALTERNATIVE SCHOOL

Henry Sanoff and George Barbour

Key Words

Committment, charrette

Problem

Developing the building program of a school through the interaction of parent-child-teacher in the participatory planning process.

Method

Goal. To help the Wallace O'Neal community gather information about itself so as to create and evaluate architectural design.

Application. Wallace O'Neal Day School in Pinehurst, North Carolina.

Participants. Project architect and his staff, consultant architect (charette planner), psychologist, 14 children, architects from the department of public instruction, representatives from the learning institution of North Carolina, and child development psychologist.

Process. The components of the process were problem, community participants, experts and commitment of the participants. A series of team meetings prior to charette were held. The game called charratte lasted three full days and three evenings. Charratte sessions started with children's session as outlined on next page.

WISH-POEM (I wish my school....)
FILLING OUT THE BLANKS

CLEAR EDUCATIONAL & ARCHITECTURAL OBJECTIVES:
SPACIOUSNESS, FREEDOM,
VARIETY, SPONTANEITY, SENSUOUS
APPRECIATION OF OBJECTS &
SETTINGS

RATING SCALE

BIPOLAR ADJACENCY SCALE TO
RATE THE PRESENT SCHOOL
ENVIRONMENT & THEIR CONCEPT
OF AN IDEAL ENVIRONMENT
(Figure 16)

GENERAL LIKE OF THE PRESENT
FACILITY BUT WISH FOR MORE
UNUSUAL, IMAGINATIVE, SPACIOUS,
COLORFUL & FREE SPACE

SCHOOL DRAWINGS

FOUR ARCHITYPICAL SCHOOLS
WERE TO BE DRAWN: A JAPANESE
SCHOOL, TYPICAL AMERICAN
SCHOOL, AFRICAN SCHOOL &
A DREAM SCHOOL
(Figure 17)

DESIRE FOR VARIETY,
SPONTANEITY, SUNLIGHT
& TEXTURE

ROLE PLAY

CHILDREN ROLES OF THE
ARCHITECT BUILDING
COMMITTEE MEMBER, BUILDER,
PARENT 1 & 2, TEACHER 1 &
2, HEADMASTER TO BRING ABOUT
THEIR CONFLICTING VIEWS

FACT: STUDENTS CAN GRASP
& CONTRIBUTE TO THE PROGRAM
& FACILITY DESIGN

Technique

Result

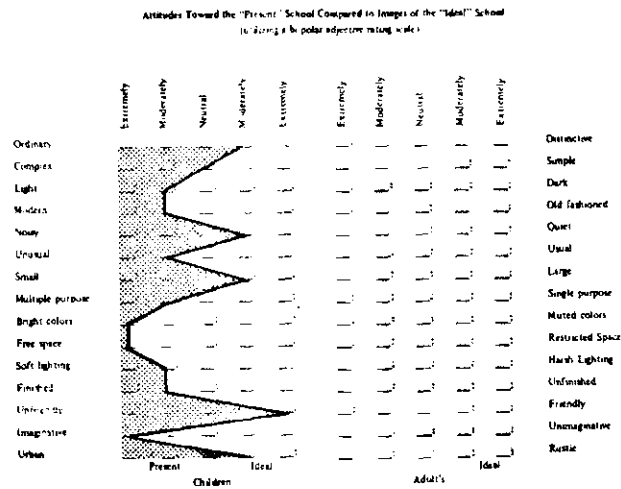


Figure 16. Analysis of Response of Adults and Children Toward Present School Compared to Images of the Ideal School.

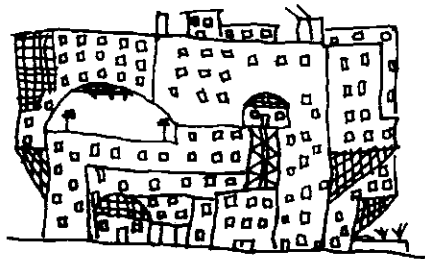


Figure 17. Children's Image of A School as it should be.

PRIMARY ACTIVITY

STUDY TO BE OBSERVED

LEARNING METHODS

TEACHER

STUDENT

ENVIRONMENT

STORAGE

NECESSITIES

GENERAL DESIGN REQUIREMENTS

GENERAL NOTES

TEACHER - STUDENT INTERACTION

REQUIREMENTS FOR TEACHER AS PRESENCE

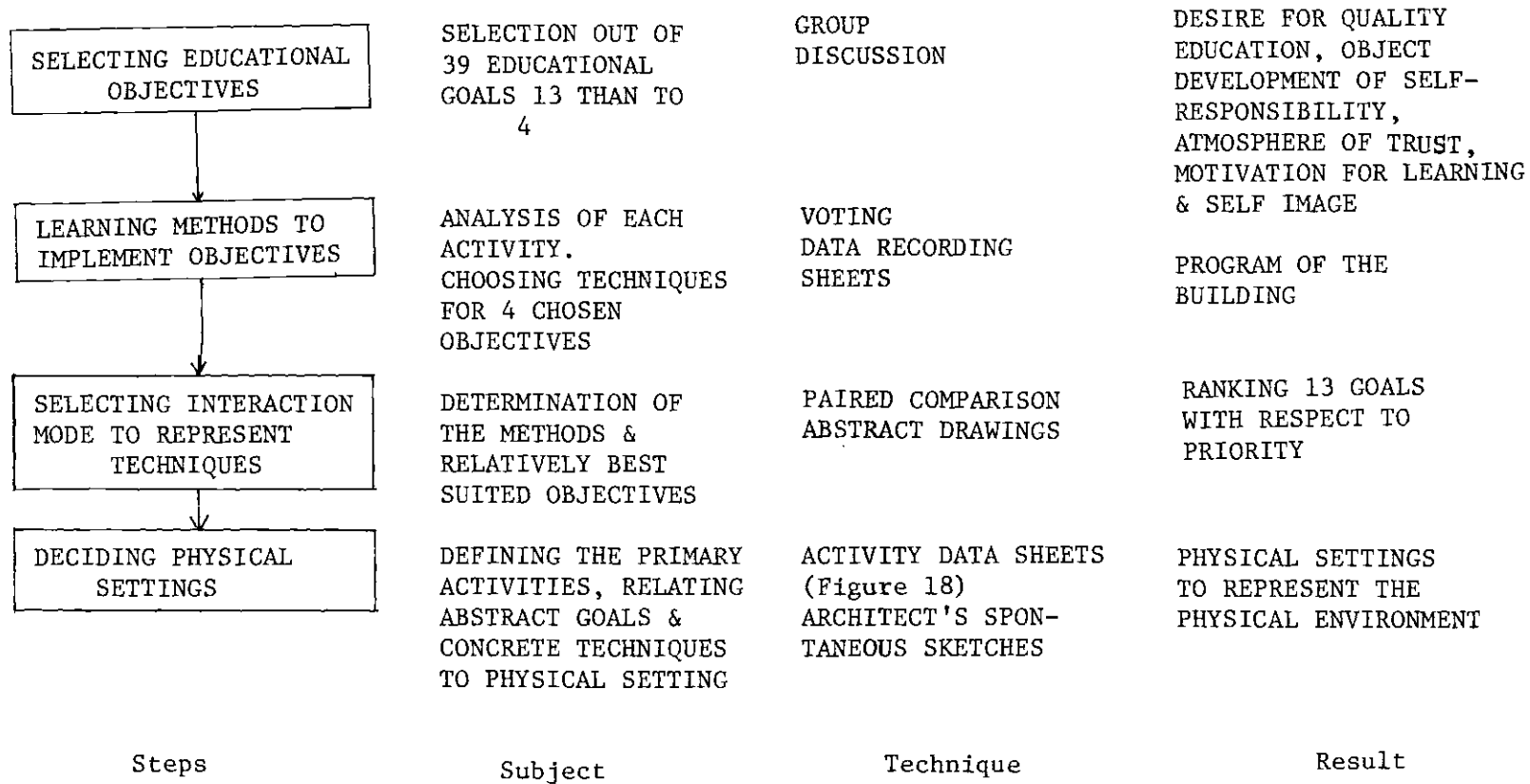
REQUIREMENTS FOR STUDENT AS PRESENCE

REQUIREMENTS FOR TEACHER AS PRESENCE

REQUIREMENTS FOR STUDENT AS PRESENCE

Figure 18. Activity Data Sheet.

Below is the summary of charrratte.



Conclusion

Success. a. Children's session was very contributory and fruitful.

b. Everybody in the school community was satisfied with the result because throughout the participatory decision process each member was given the opportunity of defending his ideas and sharing them with the ideas of the other members of the group.

c. The main goal, development of an educational basis to generate a building program was maintained.

d. Group awareness of the relationship between learning the techniques and implementing them to shape the spaces was developed.

e. The participants experienced the process of architect's translation of verbal statements into physical form.

f. First step of the charrette gave the user the opportunity to formulate his own ideas. Last step brought about meaningful and wide variety of educational choices and spatial alternatives.

Failure. a. Group agreement was not attained in the first step of selection of objectives.

b. Some participants felt unable to handle the second step in which they were supposed to use methods to implement objectives selected.

c. Step three, the selection of interaction mode was too complex and abstract for the participants.

Recommendation. a. Children should continue to be considered an integral part of any school planning.

b. The process could be in more steps for the sake of participants' adaptation to the complex activities.

TOWARD CITIZEN PARTICIPATION IN PLANNING AND DESIGN:
POTENTIAL TECHNIQUES-ISSUE BALLOT

Floyd E. Barwig

Key Words

Issue, vote, television, dialogue

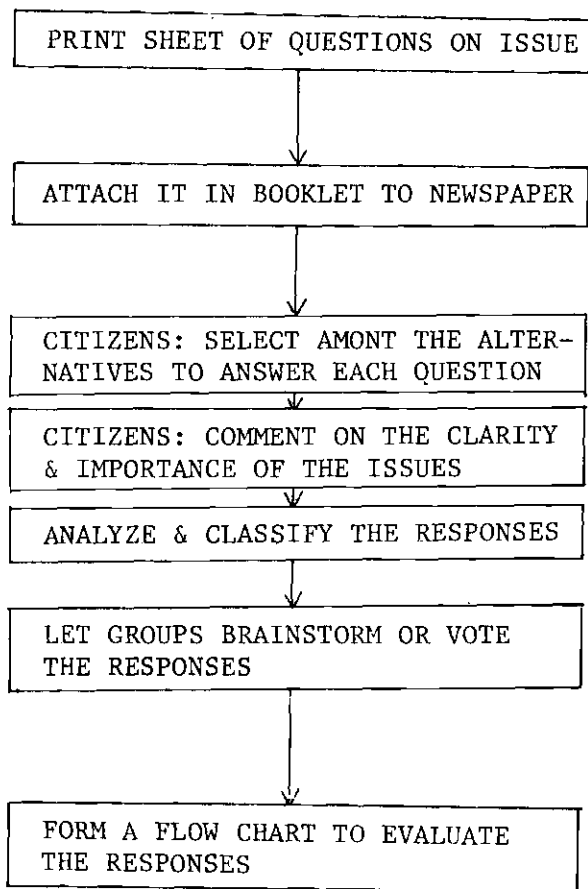
Problem

Achieving participation at all levels of institutional activity for deciding a long range policy. Therefore, the task is to remedy the institutions.

Method

Goal. To offer the citizens the opportunity to choose from various levels of involvement through printed response forms, mainly to start a common dialogue on an issue.

Application. Dr. Chandler H. Stevens originated it and it was first presented as alternative means of obtaining citizen feedback for the Governor of Puerto Rico. First extensive test was applied at 1970 invasion of Cambodia and subsequent shootings at Kent State. People's reaction was to be measured as feedback. Another use was to define the goals for elementary and secondary education in the State Massachusetts. Thirdly, Issue Ballot Technique has been in use in Florida to support Ford Foundation in remote broadcasting of group meetings, debates and interviews. Also, in New York City, the city's Plan Association is conducting a series of "town meetings" by use of television programs and by distributing a book on regional planning issues like housing, poverty and transportation. The Association is collecting feedback from the citizens through issue ballots. (1976)



Steps

EACH QUESTION IS PRECEDED BY
AN EXPLANATORY STATEMENT

THE REAR COVER CAN BE USED AS THE
BALLOT TO FEED INTO COMPUTER OR
IT MIGHT BE IN COUPON FORM IN A
NEWSPAPER FIT FOR SCANNING. IT
MIGHT BE SHOWN BY THE T.V. THE
SAME DAY

BY WRITING/TELEPHONE

BY WRITING/TELEPHONE

PREPARED IN REPORT FORM

FOR GROUPS OF MORE THAN 20,
ELECTRONIC VOTING BY A HARDWARE:
WITH VOTING SWITCHES & CENTRAL
DIGITAL TABULATOR & A DISPLAY TO
REPORT THE NUMBER OF SWITCHES
TURNED TO EACH VOTING POSITION
(90 PEOPLE CAN VOTE AT A TIME)

PRESENTATION OF THE DATA THROUGH
LARGE SCREEN COMPUTER GRAPHICS
TV CAN BE THE MEANS

Technique

Conclusion

Success. a. The electronic format system of voting is liked by participants.

b. Responses reflect the opinions of "any one" because of the format and anonymity.

c. All levels of involvement, anonymity is possible.

d. The main intent which is to initiate a dialogue about an issue and to identify the alternatives which a community would prefer to see, for an eventual referendum to be achieved.

e. Large number of citizen groups, foundations, corporations, government agencies, television stations, newspaper and community groups can use the technique.

f. Issue balloting makes each citizen aware of the other persons interested in the same issue and forms association between the citizens.

g. The citizens are forwarded information on an issue concerning themselves through experts and are feedbacking the experts. This is a valuable attempt for the citizens to free themselves from the institutions making decisions for them, rather than with them.

Failure. The techniques still needs to be developed to test whether or not issue balloting can form regional and local community dialogue.

Recommendation. The statements of issues presented by the institution should be very clear and objective not to mislead the citizens.

TOWARD CITIZEN PARTICIPATION IN PLANNING AND DESIGN:
POTENTIAL TECHNIQUES-OPINION POLLS

Floyd E. Barwig

Key Words

Opinion, institution

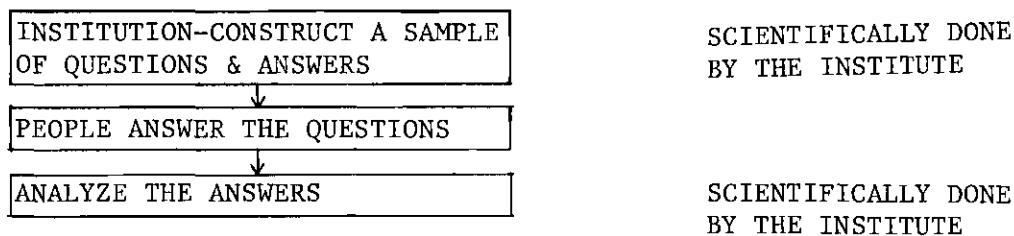
Problem

Developing data on the feelings and opinions of a community on an issue.

Method

Participants. The selected sample of people and the institution preparing opinion polls.

Process.



Steps

Technique

Conclusion:

Failure. a. The real opinions of the community are not reflected in their answers because the technique is constructed and evaluated by a particular institution.

b. It is considered to be a device to collect data for decision-making by an institution.

Recommendation. The members of the institution need to be educated by human sciences to prepare the sample of questions to be asked of people.

THE USE OF SURVEYS IN THE ASSESSMENT
OF RESIDENTIAL DESIGN

A. Ravetz

Key Words

Quarry Hill, interview, survey, environment.

Problem

Recording the interaction of the man-Made environment to the human behavior so as to benefit in bettering the designs and activating a large number of people to participate in city planning decisions.

Method

Goal. To get information about the tenants' reactions to the estate layout.

Application. It was applied to Quarry Hill Flats: Estate of 930 flats built in the center of Leeds between 1935-1940. There were 110 blocks of buildings, and the size of flats ranged between 1 and 7 in type. The maximum height of the blocks were 8 stories.

Participants. Out of 924 households, 103 were interviewed.

Process. A number of years after the construction and occupation of the flats, a survey was made in the form of structured and open-ended interview. Then the answers of the people to the building evaluation questions were recorded.

Conclusion

Success. a. If used with critical awareness of its limitations, survey can become valuable as a means of communication between designers, housing tenants and local authorities.

b. Surveys have the potential to contribute to form documents on human response to the environment especially at urban scale.

c. By use of surveys, quite a large number of people can actively participate in the city creation.

Failure. a. The same questionnaire cannot be used twice.

b. No standardization of surveys is achieved to be more useful as in the field of educational testing.

c. The built environment is not the sole determinant of human behavior; there are other important factors also.

d. No investigation has been made to show the differences in results when the survey is carried out by different operators or at different times or different places.

e. Surveys are unscientific because the architect and the person surveyed start with unlike perception of the built environment. Therefore, the data collected from an interview and observation reflect primarily the interests and experience of the surveyor instead of those of the surveyed.

f. Evaluation of the surveys can change by scale, time and style factors.

g. In Quarry Hill Plats case there was the discrepancy between the surveyor's perception of the built environment and the experience of the people surveyed.

h. In Quarry Hill Flats case, some questions of the interview caused embarrassment and hesitation; like whether the occupants of the flats had enough privacy, and how many other flats on the estate, they visited.

i. It is arguable whether it is correct to call to the minds of the people surveyed, something that is not present: here is an example from Quarry Hill Flats: 45% of the people surveyed answered affirmatively to the question asking if they had ever wished more seats in the open spaces around the buildings. But when the question was omitted in later stages, nobody arose to complain about the lack of adequate number of seats. However, the tenants mentioned their need for playgrounds, although no specific question was asked by the surveyors regarding the subject.

Recommendation. a. The surveyor should be sensitive to the reactions of the respondents in order to include within the structure of the survey, as much input as possible from the respondents.

b. Research can be done to form a program of standardized surveys.

THE OREGON EXPERIMENT

C. Alexander et al.

The behavioristic approach to the environmental problems as led by Christopher Alexander bases the initiation of the process of the decision-making on the behavioral scientist who makes indifferent observations of economy and human behavior in the related community.

The behavioristic approach is necessary during the predesign when a set of relationships between the behavioral components and physical components is established. The approach is not necessary during the final phase of the design process.

Essentially in behavioristic approach the evaluation of the alternatives is made in regard to the values which are derived from human behavior.

Key Words

Pattern, participation

Problem

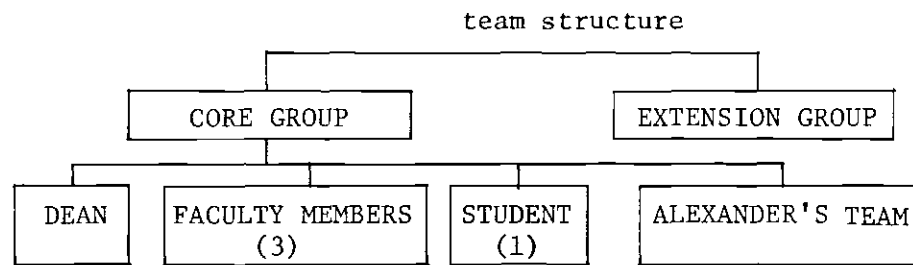
Fulfilling the need of people to decide actively about the environment they will interact with; and bringing people together to make design decisions better adapted to human functions; and giving opportunity to people to create and change the environment.

Method

Goal. To create an environment for the user through a process of working with the user.

Application I: The School of Music on the Oregon Campus

Participants



Communicative Media. Pattern language

Principles. Six major principles; organic order, participation, (Figure 19), piece-meal growth, patterns, diagnosis, and coordination.

Process

WALK AROUND THE EXISTING
BUILDINGS ON THE SITE
(Figure 20)

OUTLINE EXISTING BUILDINGS
OF THE SCHOOL OF MUSIC
(Figure 20)

SKETCH THE POSSIBLE LOCATIONS
FOR NEW BUILDINGS (Figure 21)

SKETCH THE POSSIBLE OUTDOOR
SMALL CENTERS OF ACTIVITY
(Figure 22)

DECIDE CRITICAL PROXIMITY OF
BUILDINGS AND PUBLIC OPEN
SPACES AND SKETCH
(Figure 23)

ASSIGN NEW FUNCTIONS TO AREAS
(BOTH IN OLD & NEW BUILDINGS)

WALK AROUND THE SITE

IDENTIFY THE CIRCULATION
PATTERN CLEARLY (Figure 24)

DEVELOP DETAILS (Figure 25)

User Group

The user group works

MONDAY

MONDAY

TUESDAY

WEDNESDAY

WEDNESDAY

THURSDAY-TO IMAGINE EXACT
LOCATION OF BUILDING AND
FEEL THE OPEN SPACES

THURSDAY-FOR EXAMPLE, THE
ORGANIZATION OF PIANO AND
ORGAN TEACHING STUDIOS IS
SKETCHED

DESIGNING TEAM

Some important points to be undertaken through the process are the following:

- a. There should be a design team for every proposed project.
- b. User group may initiate a project and only those projects initiated by the users should be considered for funding.
- c. The planning team should help the users by giving them the necessary patterns, diagnosis.
- d. The user design team should be allowed to complete its schematic design. Then the architect or builder should start his role.



As proposed by
the project sponsor.



As specified in
the project request.



As designed by the
senior analyst.



As produced by the
programmers.



As installed at the
user's site.



What the User
wanted.

Figure 19. Participation.

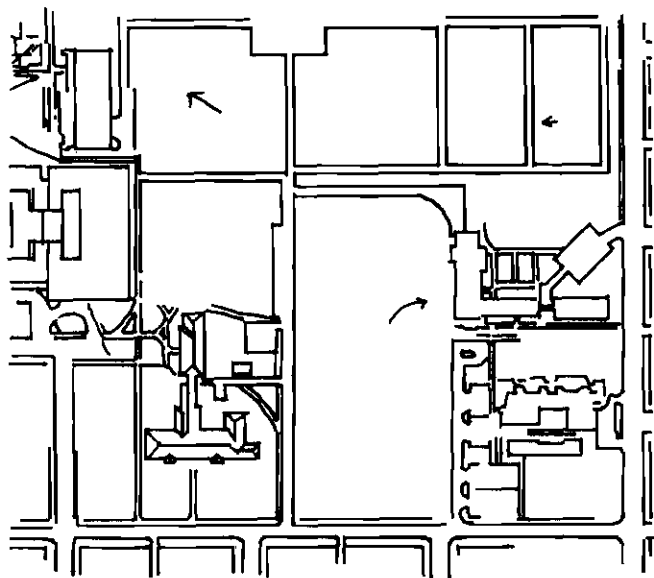


Figure 20. The existing building.

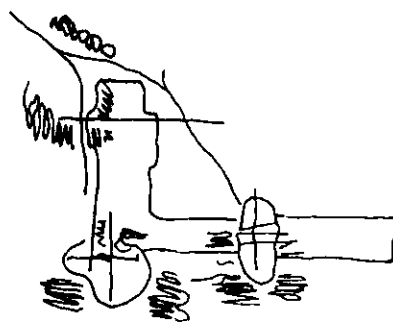


Figure 21. Monday.

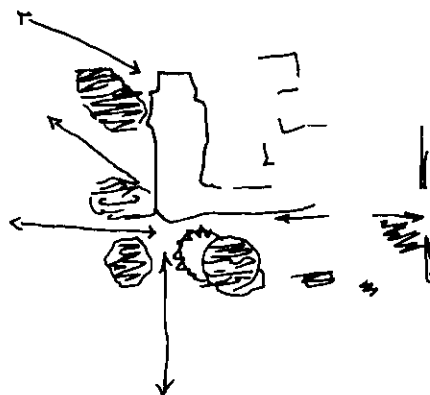


Figure 22. Tuesday.

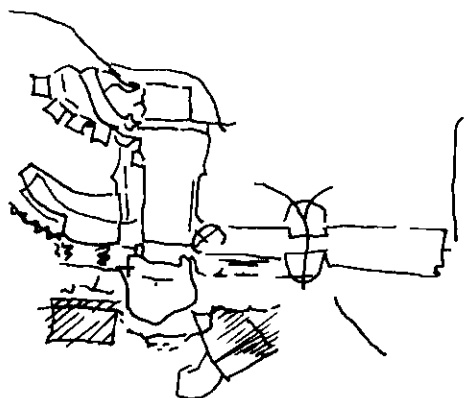


Figure 23. Wednesday.

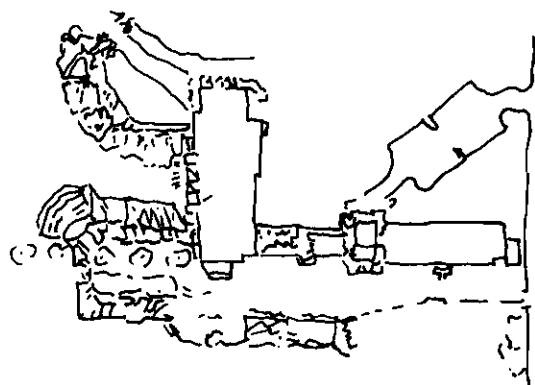


Figure 24. Thursday.



Figure 25. Thursday
afternoon.

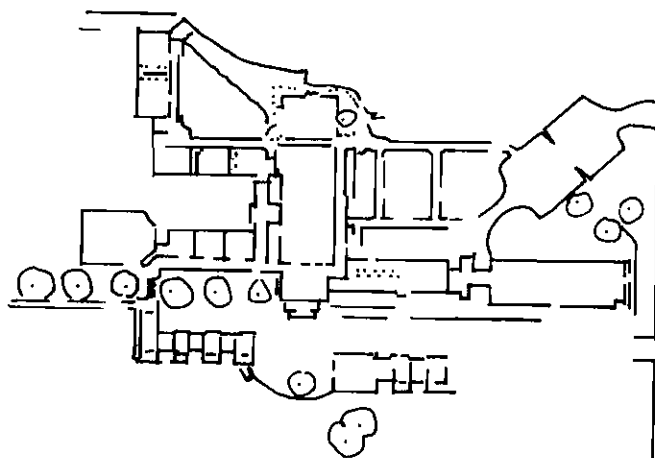


Figure 26. The Final Drawing.

e. Working groups (users) should not exceed ten people. Otherwise communication becomes difficult.

f. Small project should be chosen so that the team members can feel and experience building (the process and the product) easily and personally.

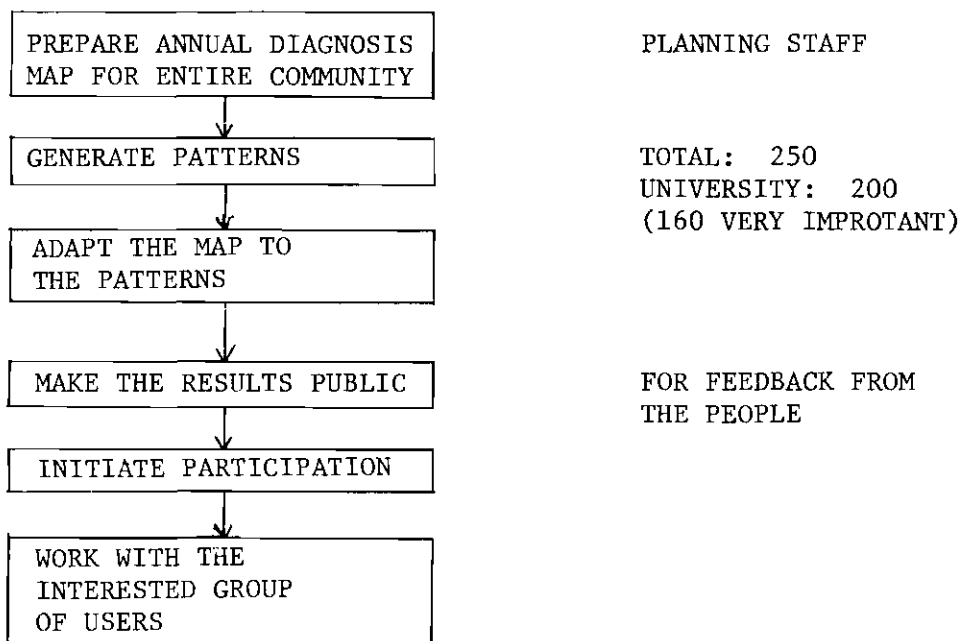
Application II. Master plan of Oregon at Eugene Campus was to be redesigned.

Goal. To develop a concrete masterplan that can be understood by human beings in terms of their everyday experience.

Participants. Nine students, 5 faculty members, 4 administrators, and planning team, which consisted of planners, architects, builders, the campus architect, director of campus physical plant and the planning coordinator.

Communicative Media. Pattern language.

Process.



Conclusion

Success. a. The future design decisions were possible without disturbing the old pattern.

b. The old system was not totally refused but integrated with the new needs through piece-meal process.

c. It was an inexpensive development.

d. The method allowed the people to feel and experience the spaces themselves instead of being imposed by the planners.

e. This form of participation led to a step-by-step creation of a rich and various order.

f. Participation creates chaos when people do not know what they are doing in solutions. Therefore, there is the need to establish some shared principle, patterns.

g. Although the actual users making the design decisions would be replaced by others in the future, still the design solutions were to reflect the human experience of similar type of users. Their decisions would solve the needs of the future users better than the decisions of the designers.

h. The campus experiment exemplified an intermediate type of participation in which the buildings were designed by users and built by architects and contractors.

i. The users were brought together to decide about and to change their environment. The members of the campus community had an influence to shape the future of the master plan of their campus.

Failure. This type of participation is unlikely to be efficient when applied to large scale projects where the user types are more than

ten in number.

Recommendation. It is suggested that this method is to be applied to small design projects instead of complex ones.

HOUSES GENERATED BY PATTERNS

C. Alexander et. al.

Key Words

Pattern, houses, Peru.

Problem

Finding open-ended solutions to design problems in which the dwellers can apply their own personal choices to a considerable extent.

Method

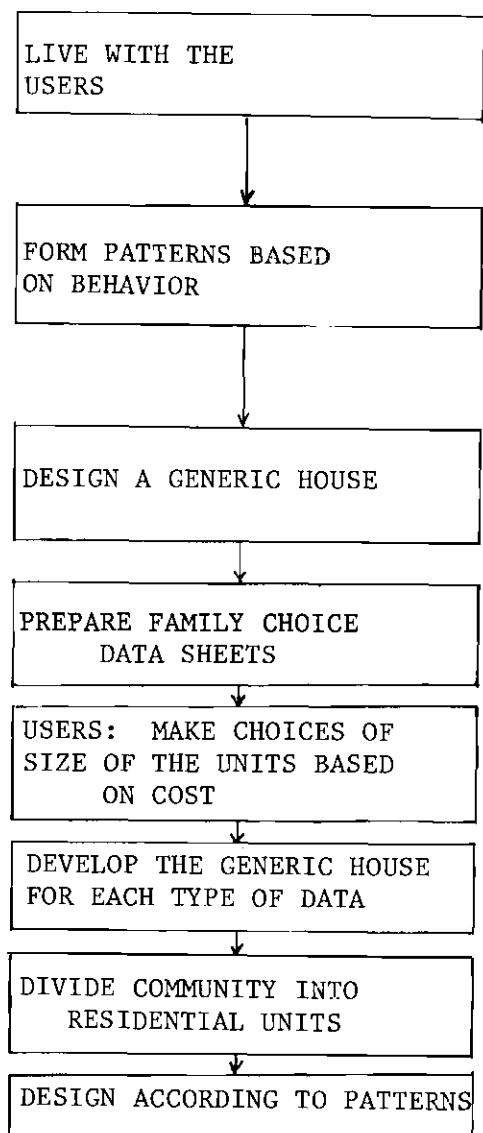
Goal. To design identifiable and radically separated dwelling units each having inward looking cells.

Application. Low income housing in Peru. A competition design project in January 1969, for a community of 1500 houses on a site of 40 hectares.

Participants. Community members (representing the possible future users of houses) and the design team.

Communication Media. Pattern language, composed of patterns which means "an arrangement of parts in the environment, which is needed to solve a recurrent, social, psychological or technical problem."³² Each pattern has three definite parts: context which is a set of conditions; solution which is the partial arrangement of parts; and problem.

Process



steps

EXPERIENCING THE DAILY,
COMMON LIVES OF THE
PERSPECTIVE USERS
(DESIGN TEAM)

OBSERVATION: (e.g., MEN SEEK
CORNERS OF BEER SHOPS TO
SPEND THEIR TIME TALKING &
DRINKING-PATTERN: A SMALL
PLACE OF 10-20 METERS IN
DIAMETER (DESIGN TEAM)

DESIGN BASED ON 67 PATTERNS
TO SOLVE EACH PROBLEM. 2
STORY HOUSE, WIDTH: 5.20 METERS
LENGTH: 13-27 METERS

EACH SPACE IN THE DWELLING UNIT
LIKE SALA, FAMILY ROOM, MAIN
PATIOS, KITCHEN, LAUNDRY, BED
ALCOVES, MASTER BEDROOM, GRAND-
MOTHER'S ALCOVE, LAUNDRY, STORAGE
PATIO, CAR HOUSE DISTANCE, RENTAL
BACK DOOR, SHOP, EXTRAS, FINISHES
HAVE COST ALTERNATIVES WHICH WILL
DECIDE THEIR SIZES AND THE DESIGN
OF THE VARIOUS HOUSES

43 RESIDENTIAL UNITS, 1 EACH
WITH 25-75 houses

BY DESIGN TEAM

technique

Conclusion

Success. a. Objective, therefore scientific approach to investigate the needs of the users was favored rather than reliance on the users' verbal expressions of their needs. People's needs were established by living among them and experiencing their daily lives, cultures and behavior.

b. Among all the competition projects, this was the only alternative which satisfied the most of the programmatic requirements and attempts of low-income house dwellers by developing new methods and techniques for low-income housing.

c. The worth given to the individual as to his freedom of choice and his links with his close (family) and remote (social) environments was the basic criterion of the design: the behavioral patterns led to design solutions which reflected the perspective users' customs, social life and culture.

d. The flexibility of the units to meet the change in the family requirements was considered.

e. Taking the example from human history which proved that the last 2000-3000 years all environment had been designed by lay people, the users and the Peruvian architects were encouraged to build their own houses by generating infinite variety of designs based on the generic house.

f. Although generated from the same essential cell, no two dwelling units were alike: the low income houses had variety and richness and identity.

g. The patterns combined functional analysis with advantages of typology . Alternative activity spaces were derived by combinations which led to a large number of options.

h. The choice for the process and the produce of design was made by the families who could prefer one out of a wide range of house arrangements.

i. The method was practical: local building materials could be used with industrialized construction techniques thus generating wide variety of solutions through the use of limited number of standard components.

Failure. a. Problem of magnitude: If one pattern was to be formed for each different situation, then the number of patterns would increase to an unmanageable degree.

b. The customs, traditions of a community might change by time. Therefore, strong and absolute dependance on them as criterion of human needs might not lead to the best decision.

Recommendation. Designers should be able to impose on users some behavioral patterns by the built environment instead of depending extremely on the human behavior to effect the built environment.

A PATTERN LANGUAGE WHICH GENERATES
MULTI-SERVICE CENTERS

C. Alexander et al.

Key Words

Pattern language, generate

Problem

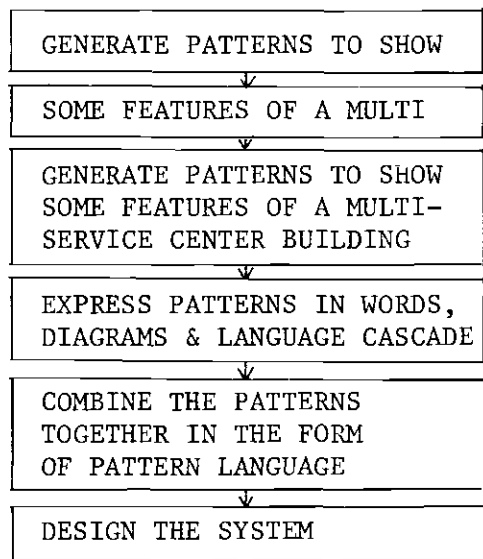
Generating multi-service centers in a community to provide the citizens with a wide range of special services especially to help the poor families with some of their environmental problems.

Method

Goal. To compromise the uniqueness of each community as to its site, climate, and other properties with the common principles which remain constant for every community.

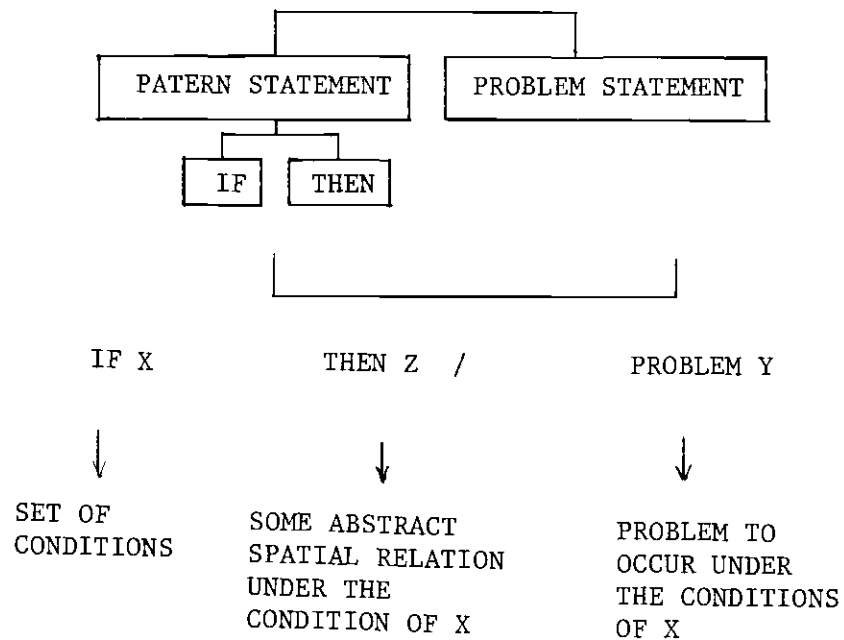
Application. A hypothetical community which needed a multi-service center. Eight buildings were generated in Hunts Point, San Francisco, Brooklyn, Bowery, Phoenix, Newark, Harlem I and II.

Process. Sixty-four Patterns were generated, each describing a relation to solve a particular problem in the building. Some examples to patterns are Small Target Areas, Location, Community, Territory and Pedestrian Density in Public Places. Only the larger and the less familiar patterns were described; the smaller and general ones were left out assuming that they were known by many architects. The ones described had the context wider than the multi-service centers to include community building and any building. Then the patterns were combined by a set of rules to form the pattern language.



steps

STRUCTURE OF PATTERN



Conclusion

Success. a. Flexibility: none of the patterns were claimed to be absolutely true; they were left open to criticism by anybody to be proved wrong or to be improved. It was declared that acceptance of some patterns could be highly unreliable; therefore, were subject to change.

b. Pattern language could be used to harmonize the solution with the unique needs of the community related to factors like site and climate.

c. Pattern language also indicated the priority of patterns with respect to their size, influence and importance as well as which patterns were to be used simultaneously.

Failure. The problem may not take place under X conditions or it may; but could be trivial, or it is not necessarily true that the relationship defined by Z should solve the problem Y.

Recommendation. Money and time need to be supplied to experiment the conclusions of the method.

BEHAVIORAL TENDENCIES AS ARCHITECTURAL STARTING POINT:
ARCHITECTURAL DESIGN SYSTEM

Argyris Liberakis

Key Words

Schemes, design, isoconstraints

Problem

Seeking solutions to environmental design problems

Method

In principle, the relationship between the environmental elements, and complex human behavior is not simple. Under a given environmental problem there should not be any alternative left out from the "scheme"; and the schemes should not create problems by conflicting other schemes. In the state of environment and scheme the problem gets solved. To solve the conflicts schemes are combined to form topologies of isoconstraints which in turn are combined to make the design, as indicated in Figure 27.

The architectural Design System has also the test process in which the designer and the user are involved. This process makes it possible to investigate the effects of the environment on man and the alterations made by man on the environment. This is shown in Figure 28.

Next is the description of the terms of the author in comparison to those of C. Jones and C. Alexander.³³

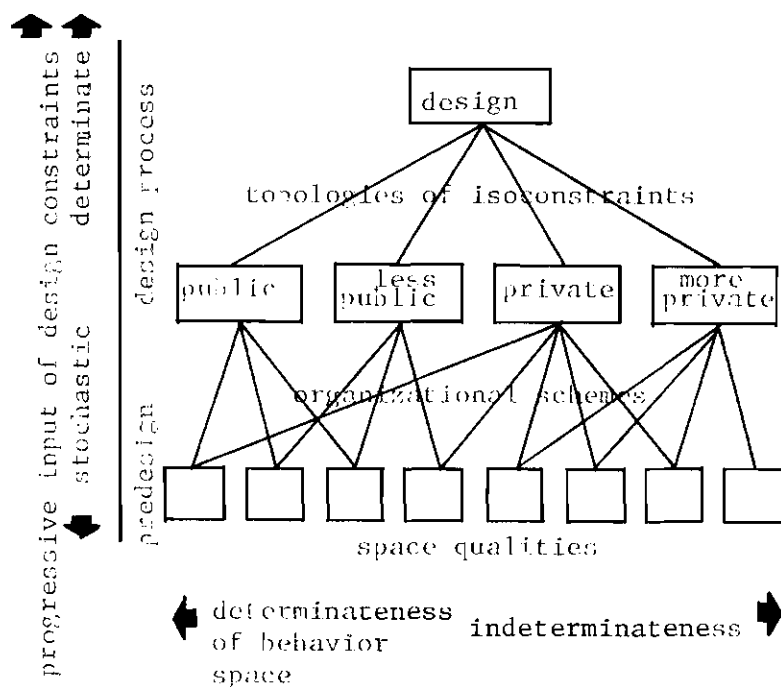


Figure 28. Architectural Design System.

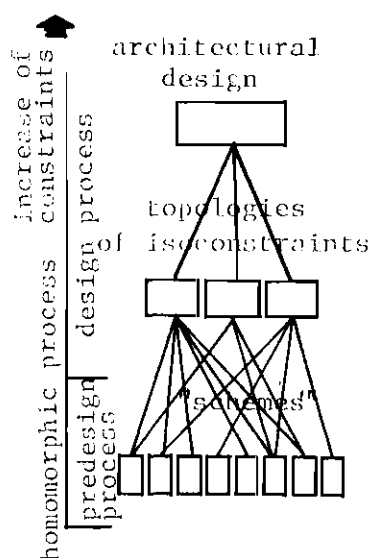


Figure 27. Relationship of Schemes and Design.

Table 2. Comparison of Design Systems by Three People.

STRUCTURES (Jones)	PATTERNS (Alexander)	ORGANIZATIONAL SCHEMES Liberakis
SITUATION STRUCTURE	CONTEXT	"ENRIRONMENT"
	PROBLEM	OBJECTIVE
SOLUTION STRUCTURE	PATTERNS	"SCHEMES"
RESOURCES STRUCTURE	EVIDENCE	RESOURCES

Conclusion

Success. a. The system is testable in real world situations through independent sub-sub systems. Thus, the feedback system makes the design corrections possible before the design decisions are implemented.

b. The system is generalizable, flexible and reusable.

c. The systems makes full knowledge of resources available to the user of the sytem.

Failure. This system is too theoretical to be accepted.

Recommendation. Architectural Design System should be applied to real design problems to see if it is successful.

CHAPTER IV

EXPERIMENT

Problem Statement

The aim is to investigate and establish the goals of various users of College of Architecture as expected from the program of the Addition to Architecture Building, and then compare these goals to the ones underlying the existing program of the Addition to see if there is any difference due to the user participation.

How was the Program of the Addition Prepared?

In 1965 the director, Paul M. Heffernan, expressed the need for additional space to the Construction Engineer of Georgia Tech.

In 1967 specific space needs were documented.

In 1974 basic work on the program of the addition was started by architecture students. They prepared report on "Projection of future needs and of the relationship of the curriculum and teaching method to space."³⁴ One student designed the addition for his fifth year thesis. Later in the same year a special research committee of Georgia Tech made a survey of thirty-two architecture schools to program the new facilities. The questionnaires put emphasis on the items like design studios, audio visual, special programs, photography, computer, library and art facilities.

In 1975, Director Heffernan proposed space requirements according

to the budget allocated. The same year a class of Building performance students surveyed the present space use and the quality of space in the existing building.

The end of 1975-76 was marked as a critical time when the shortage of space and lack of faculty was strongly felt.

In 1976 with the new dean, the funds were allocated for the new building and the Building Committee was formed to which previous programmatic studies were handed. The architects were hired for the job to start the construction in the Fall of 1977 and complete for occupancy by 1980.

The Addition to The Architecture Building will be built within a budget of \$2,000,000. Fifty-three thousand square feet will be provided. The building is presently being designed. A committee has been formed consisting of the dean, the assistant dean, the undergraduate design division director, one librarian, one building construction teacher, the director of Industrial Design, and two architecture students. This programming committee works in collaboration with the consultant architect and an architectural firm.

Although the design state of the Addition to The Architecture Building is not the subject of this research, it is important to examine its design process in key terms that are related to user participation.

Most of the students and the faculty did not like the design of the Addition when it was presented to them. They had strong negative reactions to it: "plain design," "overwhelmingly plain," "non-creative," "simple, and simply disgusting," "formal," "symmetrical," with "poor space utilization," and "without the enthusiasm"³⁵ were the commonly

shared expressions they used to describe the design.

Two types of petitions were initiated by students and faculty to express their protest. What is interesting about the popular subject is that the anger was based on the fact that the students felt that the design indicated no input from the students, and that the solution proved to be non-responsive to their needs. They felt that they were ignored by the Building Committee which stated that the students could have participated in the programming directly or through the two student representatives.

The end of the episode proves how strong the user group can be to implement the design decisions if stimulated and organized.

By the literature research on case studies and my experiment, I dare to state that the problem of the Addition is a very typical problem of user participation.

Unless the users are asked individually or stimulated strongly they are not willing to participate in the programming of design projects. They either do not wish to be involved in the process or are unable to spare the time. The lack of organization of the user group makes the situation worse: The students claim that they did not even know which students were members of the Building Committee.

Through their protests, the students successfully made the Building Committee and the architects aware of the importance of their opinions and their knowledge of their needs. The result was that the architects requested and were granted a six-week extension to the design period.

Method to Determine the Priority of User Goals
in the Addition to Architecture Building

Mainly the method was constructed about four groups of people.

Each group had students, administrators, teachers and support or service members. The individuals of each group issued and discussed their own expectations from the program of the Addition. Then each person ranked the whole list of goals. Overall ranked list showed the general attitude of a number of people who presented various types of users of the Addition. The steps of the process were as follows:

1. Identification of Main Groups (types) of Users Based on the Program of the Existing College of Architecture

A. Teaching Group

- a. Architectural Design Subgroup
 - 1. Graduate
 - 2. Undergraduate
- b. Architectural History Subgroup
- c. Visual Communication Subgroup
- d. Architectural Structures Subgroup
- e. Technical or Support Subgroup
- f. Architectural Research Subgroup
- g. City Planning Department
- h. Industrial Design Department
- i. Building Construction Department

B. Administrative Group

- a. Dean
- b. Assistant Dean
- c. Director of Architectural Design
 - 1. Graduate
 - 2. Undergraduate
- d. Director of Architectural Research
- e. Director of City Planning Department
- f. Director of Industrial Design Department
- g. Director of Building Construction Department

C. Student Group

- a. Architecture
- b. City Planning
- c. Industrial Design
- d. Building Construction

- D. Support and Service Group
 - a. Janitor
 - b. Librarian
 - c. Secretary
 - d. Technician (see Figure 29)

II. Formation of Discussion Groups

A. Principle

The experiment included a number of participants to form subject groups. Each group would cover up as many user types as possible. Besides there would be no discrimination as to race, nationality and sex.

B. Strategies

Either one of the strategies would be adapted to choose the participants on random basis: if the first would not work, the second would be considered.

a. Volunteer Basis

The purpose of this research project and the type of users needed to form groups would be listed and posted on boards and walls of the Architecture Building where everybody could see and sign up if he was interested. (See Figure 30). This strategy did not work, as nobody signed up during four days.

b. One to One Basis

With a preliminary statement of purpose similar to the notice, people of various user types were asked individually to participate in the group discussions. A list of names belonging to the user groups was obtained. First name on each part was asked to participate. If not accepted or not found, the second was tried. This strategy worked; people signed up choosing one of the four possible days. The only parameter for the formation of groups was "time preference."

C. Groups

a. Number of participants in our group:

That was limited by maximum seven based upon the literature findings; that a small group was easy to handle.

b. Number of Groups

It was derived from the total type of users divided by five, which is smaller than maximum number of people in one group. Four groups were formed.

c. Group Composition:

Each group had to contain as different user type representatives as possible. Total fifteen people represented the user types in the Architecture Building.

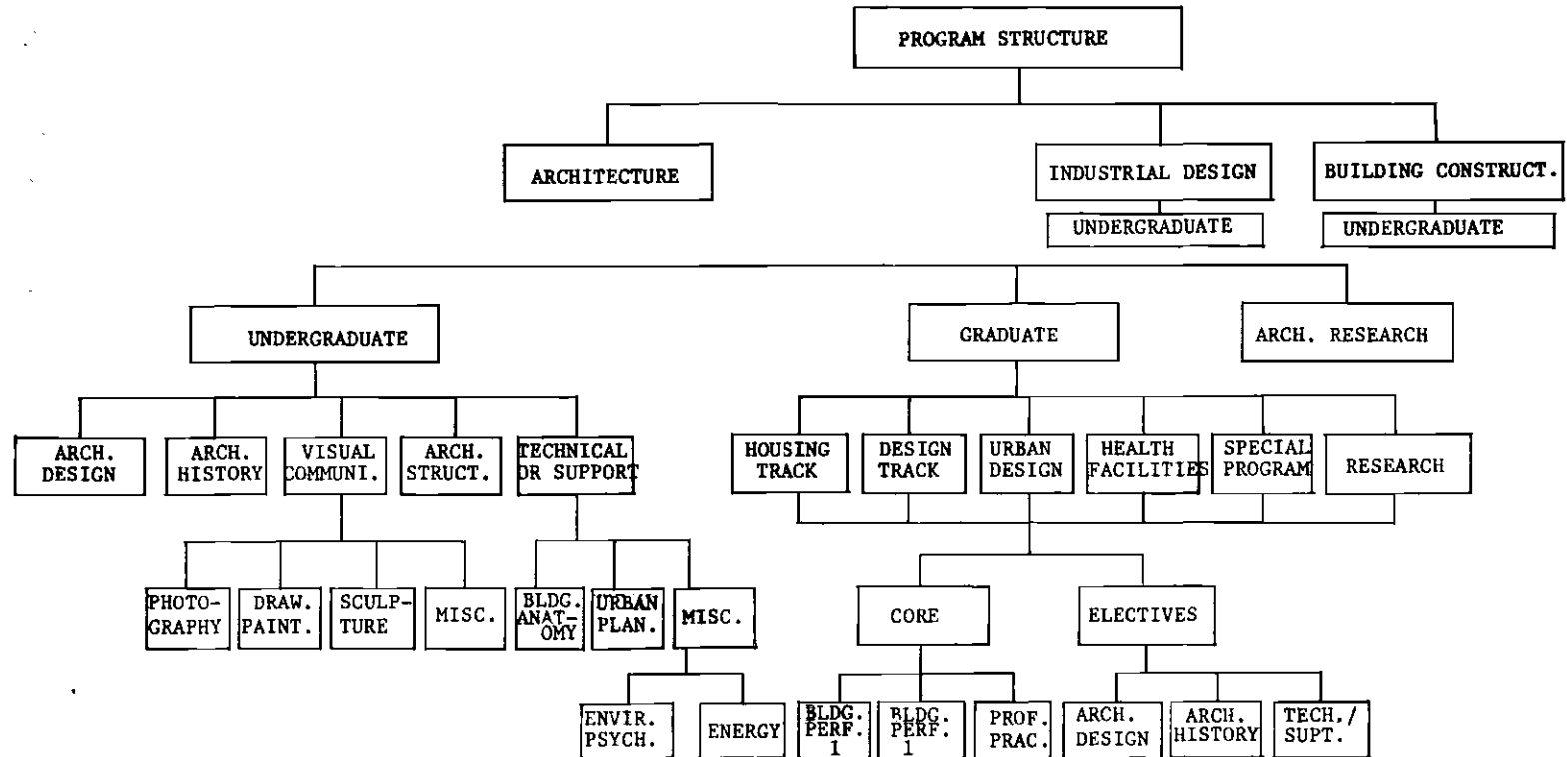
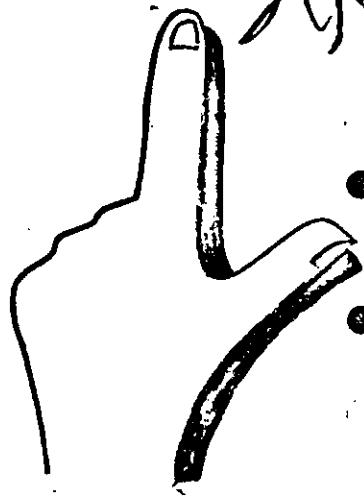


Figure 29. College of Architecture-Educational System.

ADDITION TO ARCHITECTURE



I WOULD LIKE TO KNOW YOUR
● EXPECTATIONS FROM ADDITION
TO ARCH. BLDG FROM YOUR USE
POINT OF VIEW, AND

● GOALS THAT ADDITION BUILDINGS
SHOULD FULFILL FOR THE BENE
FIT OF ALL FUTURE USERS
FOR A RESEARCH PROJECT IN
WHICH I AM TRYING TO INVE
STIGATE THE POINT THAT THE

BLDG.

USERS SHOULD PARTICIPATE IN DESIGN DECISIONS.
EVERYBODY IS INVITED. IF INTERESTED IN PARTICIPA
TION, PLEASE SIGN UP YOUR NAME, PHONE NO., AND
YOUR CHOICE DAY + HOUR FOR THE FIRST DISCUSSION.
THERE'LL BE TWO SESSIONS: EACH GATHERING WILL
BE HELD IN SMALL GROUPS + LAST HALF AN HOUR.
ALTERNATIVE DATES FOR THE FIRST DISCUSSION:

Figure 30. Notice.

MAY 2. MON. 9:00 AM, 11:00 AM, 12:00 PM, 1:00 PM, 2:00 PM, 4:00 PM, 5:00 PM, 6:00 PM							
MAY 3. TUES.	//	//	//	//	//	//	//
MAY 4. WED.	//	//	//	//	//	//	//
PLACE Rm. 107	STUDENTS						
<u>ARCHITECTURE (1)</u>	<u>INDUSTRIAL DESIGN (1)</u>			<u>BLDG CONSTRUCTION (1)</u>			
.....							
SERVICE							
<u>JANITOR (1)</u>	<u>SECRETARY (1)</u>	<u>LIBRARIAN (1)</u>	<u>TECHNICIAN (1-2)</u>				
.....							
ADMINISTRATIVE							
<u>DEAN</u>	<u>ASSISTANT DEAN</u>			<u>HEAD of ARCH. RESEARCH</u>			
.....							
<u>HEAD of ARCH. DESIGN (GRAD + UND (2))</u>	<u>HEAD of BLDG CONSTR.</u>			<u>HEAD of IND. DESIGN</u>			
.....							
TEACHERS							
<u>ARCH. DESIGN (GRAD + UND (2))</u>	<u>ARCH. HISTORY (1)</u>			<u>VISUAL COMMUNICATION (1)</u>			
.....							
<u>ARCH. STRUCTURES (1)</u>	<u>TECHNICAL SUPPORT (1)</u>			<u>ARCH. RESEARCH (1)</u>			
.....							
<u>BUILDING CONSTRUCTION (1)</u>	<u>INDUSTRIAL DESIGN (1)</u>						
.....							

Figure 30. (Continued).

III. Data Collection: Group Discussions

Each group was asked to gather and discuss their expectations of the Addition to The Architecture Building. The format was:

- A. The purpose and the topic of the discussion was to be summarized.
- B. Each member was given a turn to express his opinion of goals of the Addition.
- C. The issues which came out were discussed freely within the group.
- D. The issues were noted down by the coordinator who was the neutral and passive member of the group (representing the designer).
- E. The discussion period was limited to a maximum of forty-five minutes.

IV. Data Collection: Individual Ranking

The data collected from group analysis were classified and listed with each individual's opinions considered. The lists were formed.

- A. Each member of the group discussions ranked the general goals and the goals of the subgroup he was related to.
- B. The rank basis; one was to show the most important goal. The number of goals for the group or subgroup was the largest number that could be given as a priority number to indicate the least important.
- C. No two or more goals could be ranked equally. (For the description of III and IV see Figure 31).

V. Analysis: Overall Ranking of Goals of the Addition from the Experiment

Through analytical process the individually ranked goals were combined to form one list of goals for each group or subgroup.

VI. Findings

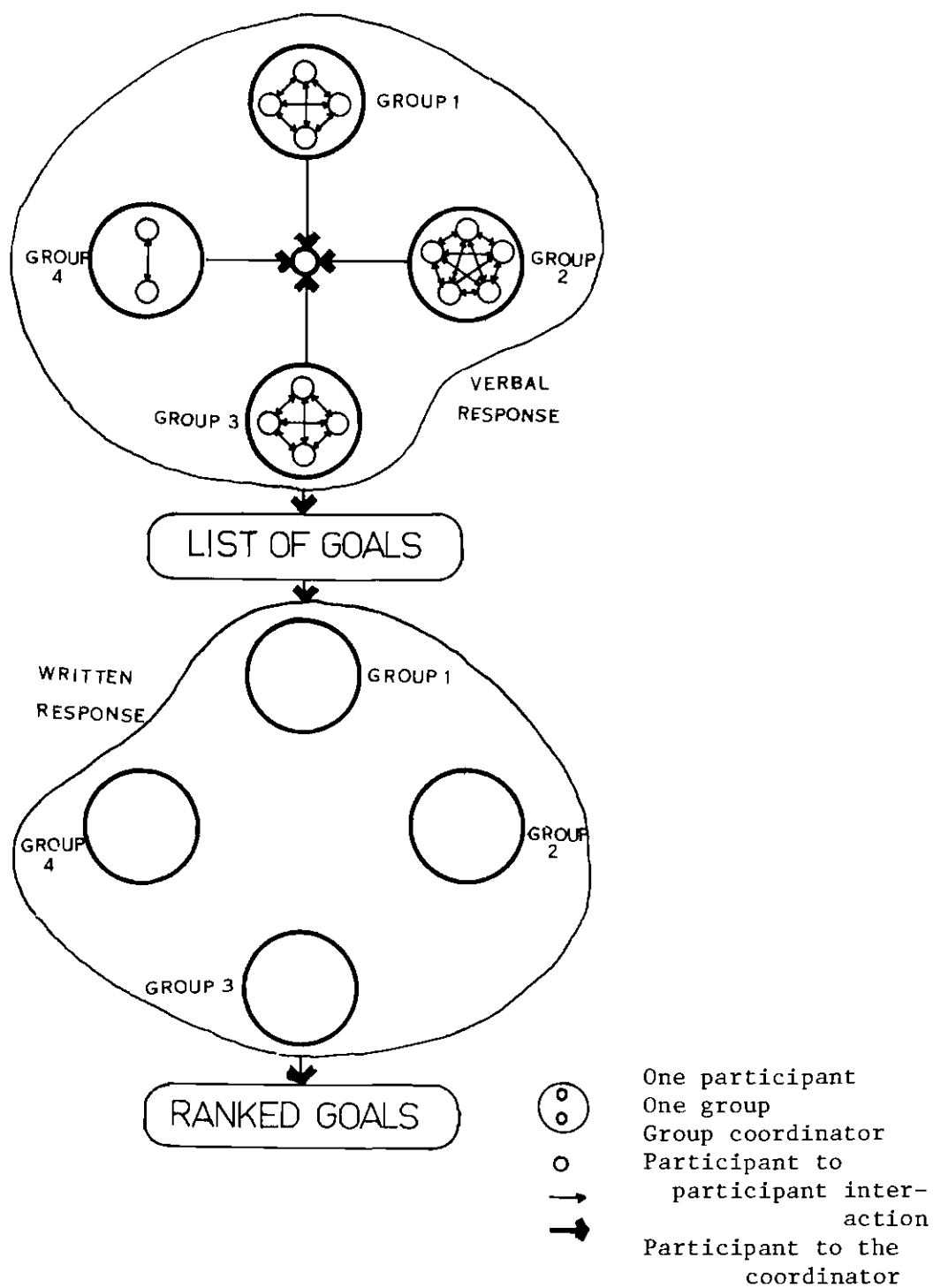


Figure 31. Experiment.

VII. Goals of the Addition from the Existing Documents

Those goals underlying the program of the Design of the Addition to the Architecture Building were derived from a set of documents.

VIII. Comparison of Goals by Experiment to Goals by Documents

Investigation was to be made whether the user participated experiment made any difference.

IX. Conclusions

X. Recommendations

List of the Names as Possible User Representative Candidates

Group A. Architecture

W. Fash (Dean)
(+) J. Smith (Assistant Dean)

Subgroup 1. Architectural Design

(+) J. Smith (Professor and Director of Graduate Division)
(+) Hughes (Professor and Director of Undergraduate Division)
Paulos (Professor)
Segrest (Professor)
Lynche (Professor)
Connell (Professor)
Boudeour (Professor)
Kelly (Professor)

Subgroup 2. Architectural History

(+) Beckum (Professor and Director)
Bridges (Professor)
Strack (Professor)

Subgroup 3. Visual Communication

(-) Connah (Professor and Director)
(+) A. Smith (Professor)
McLean (Professor)
Reshower (Professor)

Subgroup 4. Architectural Structures

(+) Young (Professor)
Gailey (Professor)
V. Smith (Professor)
Bailey (Professor)

Subgroup 5. Technical or Support
 (.) Clark (Professor)
 (+) Wilson Professor)
 (+) Young (Professor)
 Williams (Professor)
 Egan (Professor)

Subgroup 6. Architectural Research
 (+) Templer (Doctor and Director)
 (+) Paulos (Professor)
 Segrest (Professor)

Group B. Industrial Engineering
 (+) L. Payne (Professor and Director)
 Gillespie (Professor)

Group C. Building Construction
 (+) Young (Professor and Director)
 Martin (Professor)
 Binion (Professor)
 Faulkner (Professor)
 Love (Professor)³⁶

Legend:

- (+) Asked to participate and assented and was able to join the experiment.
- (+) Asked to participate and assented but was not able to join the experiment.
- () Not found in his place regardless of insistent calls.
- (.) Asked to participate but did not accept.

Choice of Student Representatives

Architecture:

First person sitting at the nearest table to the door was asked if he was a senior. (A senior student is assumed to know the needs of lower levels by experience and higher levels by close anticipation). He was also asked if he would like to participate in the experiment.

Industrial Design and Building Construction:

Their schedules were obtained. In the classrooms they were supposed to be, first person was called upon and asked if he was a senior and if so, would he like to participate.

Data Sheet

DISCUSSION GROUP I

Topic: Establishment of the Goals of the Addition to Architecture Building

Panelists: Three
 Mr. Beckum (representative of Architectural History Teachers)
 Roger Miller (representative of Architecture Students)
 Jan Chandler (representative of Librarians)

Absent: James Dillon (representative of Janitors)

Place: Room 223, the Architecture Building

Time: 3:30 P.M., May 4, 1977

Librarian Jan Chandler

Library

More staff
 More space
 Dark room integrated to the library
 Slide space
 Place for books
 Private office space to work
 Reference desk
 General study space and near a
 place for socializing
 Controllability
 Centrality of the location

General

Open plan
 Functional and easily accessible
 Interaction among the students
 and between students and faculty

Data Sheet

Professor Beckum

Architectural History

Informal type of education:
teacher-tutor system

Faculty-office-seminar type
of rooms where everybody can
sit around the table and discuss
and learn from each other and the
teacher

Instead of having large numbers
of people in lectures, having
small classes of eight, the magic
number, so that class participation
occurs. To obtain this the big
space might be partitioned into
small seminar rooms

Integration of teacher's living
place and working place so that the
student can exemplify him

More space for Architectural
History courses, each being small

Study rooms for Architectural
History students with the facility
of displaying photos and slides

Learning should be by way of fun

General

Vitruvius "Commodity, Firmness,
Delight" The building should
work well, stand well and look
good

Open, easily accessible, invitive

Flexibility to accommodate
possible future changes

Change of education from formal
to informal

Accommodation of space needs of
each group and subgroup

Data Sheet

Student R. Miller

Architectural Design

Seminar rooms for theory courses

Small classes for small number of students

A large and non-lounge library

Exciting environment

Besides teacher-to-student teaching, student-to-student teaching in the design studios: The rigidity due to the physical barriers that isolate the lower levels from the higher levels of design students should be changed. Open system of design studios without any physical barriers, vertical or horizontal, will support interaction between all design levels from freshmen to the graduate

General

Well lighted

Visually stimulating environment

The program of the new Building should be based on today's building and students: It should respond to the preoccupation and change in the students

The Building should be responsive to the behavior of the people using it

Communication between students and students, and students and faculty

Data Sheet

DISCUSSION GROUP II

Topic: Establishment of the Goals of the Addition to Architecture Building

Panelists: Five
 Ms. Morgan (representative of Undergraduate Design Teachers)
 Mr. B. Young (representative of Building Construction Administrator and Teachers)
 Dr. J. Templer (representative of Architectural Research Administrators and Teachers)
 Dr. L. Payne (representative of Industrial Design Administrators and Teachers)
 Mr. A. Smith (representative of Visual Communication Teachers)

Absent: None

Place: Room 225, Dr. Templer's office, the Architecture Building

Time: 12:00 Noon, May 5, 1977

Professor A. Smith

Visual Communications

Optimal lighting for exact coloring and shadowing (indirect type is preferred)

Locker space

Storage space for materials

Separate spaces for sculpture, photography and drawing-painting

General

Maximization of flexibility

Data Sheet

Professor Morgan

Architectural Design

Exhibit space

Bringing together of all design
levels into the same building
Centralization of design courses

No horizontal or vertical
separation of studios

General

Flexibility

Interaction of all students on
the campus.
(e.g., built-in space for casual
interactions)

Data Sheet

Doctor Templer

Architectural Research and
Administration

Faculty offices should have both privacy and easy access

Compromise between the flexibility and office space

Accessibility of the research center to all people on the campus

General

Flexibility-accessibility to change

Energy conservation concept should be reflected in the building by some means

Concept of the school as a transparent factory, an observable space

The look of the building should be good and in harmony with the neighboring buildings on the campus like Electrical Engineering and the Architecture Building

For interdepartmental information exchange all divisions should be together. (e.g., Visual Communication needs to be in the Architecture Building; now as it is isolated, other design students cannot benefit from its works)

Library does not have to be in the center

A separate space for the students to form groups and relax. (other than the library)

For casual interaction of people (students or faculty) recessed places along the corridors

Data Sheet

Professor Payne

Industrial Design and
Administration

Exhibit space for the visibility
of work

Lockable storage space integrated
into the study area

Motivating the student to work at
school instead of home by providing
him classroom study facilities

Equipment to be integrated into the
design of work space (e.g., furniture
as the divider of space rather than
wall as the barrier. Furniture as
a means of flexibility

Locked-up work studios

General

Faculty offices should be near
where the students are

Data Sheet

Professor B. Young

Building Construction and
Administration

Visibility of and proximity
to offices and class-rooms
should be inherent in the
structure of the building

Bringing together all of
the administrative offices
for personnel contact and
information exchange

General

No personalization of space in
the studios

For comprehensive teaching there
must be interaction between the
departments

Flexibility (e.g., two story space
to be designed for future use of
any function)

Data Sheet

DISCUSSION GROUP III

Topic: Establishment of the Goals of the Addition to the Architecture Building

Panelists: Four
 Ms. Walters (representative of Secretaries)
 Mr. C. Finch (representative of Technical Support Subgroup)
 Mr. J. Hand (representative of Architectural Design Students)
 Mr. J. Smith (representative of Administrators and Architectural Design Teachers)

Absent: Mr. R. Burns (representative of Industrial Design Students)

Place: Mr. J. Smith's office, the Architecture Building

Time: 1:00 P.M., May 6, 1977

Professor J. Smith

Architectural Design and
Administration

No formality in student-faculty relations

More book space in the offices

Privacy and accessibility of the offices

Two, preferably one person is optimum number to work in an office

More work space for secretaries

Water facility in the offices

Flexibility of use of classrooms and studios

Accessibility of administrative offices to the students and other people

General

Flexibility

Controllable lounge with reading, eating, drinking facilities in it for students and faculty

The centrality and accessibility of spaces (e.g., lounge and library are not as important as their quality)

Working heating system

Data Sheet

Secretary R. Walters

Secretarial

Accessibility of the secretaries
to the people served and privacy
of work

Storage space

Casual work space (e.g.,
for cutting)

Book shelves

Having view to outside

Noise control

General

Separate research department
and separate work space for the
research secretary

Small conference rooms

Data Sheet

C. Finch

Technician

Repair space

Space twice as big as the
existing one

Centralization of the
location of the technician's
office

More chairs

General

Projector lockers in class-rooms

Data Sheet

Student J. Hand

Architectural Design

Locked study rooms for
small groups

Wall space for individual
display in the studio

Chalk and board

Book space

Rough model boards

General

Special slide section in the
library which is closed and
locked to be protected

Library book-security system

Lounge to be separate from but
near to the library, and under
the librarian's control, for
reading, talking, drinking and
eating

Data Sheet

DISCUSSION GROUP IV

Topic: Establishment of the Goals of the Addition to the Architecture Building

Panelists: Two
 Mr. R. Hughes (representative of Undergraduate Design Administrator and Teachers)
 Mr. H. Cooper (representative of Building Construction Students)

Absent: Mr. E. Pavlos (representative of Architectural Research Teachers)
 Mr. Wilson (representative of Support Courses Teachers)

Place: Room 107, the Architecture Building

Time: 1:00 P.M., May 9, 1977

Professor R. Hughes

Architectural Design

Exciting environment

Flexibility of studios: when is is necessary it should be possible to change them into small or large spaces for the work groups of different sizes

General

The library should be very invitive and accessible

All of the systems should be apparent, observable, in the building so that the building itself can be a means of teaching

Flexibility of space

The education should have the element of fun, and the building should respond to it

A non-oppressive education, therefore a non-oppressive building

Data Sheet

Student: H. Cooper

Building Construction

Having all space accommodations in the same building instead of in different buildings (e. g., now old and new CE are used)

Building Construction should have an identifiable space of its own in the Addition

Flexibility within the spaces allocated to the Building Construction Department

Classrooms, conference rooms and laboratory spaces should be improved

Building Construction faculty should have better and larger offices

General

Study carrels in the library

The school must be very invitive

Good mechanical air conditioning has to be provided

Exposed building

Balancing the resources with the possibilities for maximum utility

Data Sheet

General Goals Expected From The Addition To
Architecture Building

- a. Functional
Easily accessible, functional in all systems including structural and mechanical
- b. Aesthetical, Ethical
Well-lighted, exciting, visually stimulating, invitive internal and external physical environment. The look of the building must be good and in harmony with the neighboring buildings on the campus. (e.g., Electrical Engineering Building and existing Architectural Building).
- c. Conceptual
A transparent factory, observable space, an exposed building having all structural systems apparent as means of teaching
- d. Energy Related
Energy conservation concept should be reflected in the Building by some means
- e. Budgetary
Maximum utility with the minimum cost. Balancing the alternatives or possibilities with the resources to assess the reality
- f. Flexibility
Maximization of flexibility and accessibility to accommodate possible programming changes in the future. The program of the Addition should be based on the existing building program and the educational system and should respond to the anticipated change in the students and the program in future. (e.g., two-story space to be designed for future use of any function).
- g. Information Exchange and Social Relations (Interaction)
Built form should facilitate the relationship and the interaction of all students on the campus as well as students and faculty members. Therefore the building should provide the interdepartmental exchange by having all subdivisions of Architecture (e.g., Visual Communication) and divisions of the College of Architecture (e.g., Building Construction and Industrial Design) together in the same building.
To reach this goal recessed hall along the corridors for casual interaction, and relax space for students and faculty to talk, drink or eat and read can be considered in the program.

h. Educational

Change from formal to informal education in which the element of fun is included to make the education non-oppressive. The built form should attempt to respond to it.

i. Library Study

Quiet study in the library should be provided; carrel study can be encouraged. The library should be inviting, accessible and qualitative in space. Close and locked up special study section and controllability should be provided.

Data Sheet

Architectural Design Goals

- a. Open system of design studios without any physical barrier between various design levels from freshman to graduate (No horizontal and/or vertical separation).
- b. Studios should be flexible so changeable into small or large spaces for working groups of different sizes, or classrooms.
- c. Bringing together of all the design levels into the same building. (From Freehand Drawing Building, Old Civil Engineering Building, New Civil Engineering Building, and Engineering Science Mechanics Building) to have communication between all levels of design students and to achieve comprehensive student to-student teaching: Centralization of design courses instead of isolation of them.
- d. Personal wall space in studios for exhibit in addition to adequate chalk and blackboard as well as a general exhibit space.
- e. Lockable work spaces in design studios.
- f. Book space in design studios.
- g. Seminar rooms and small theory classrooms and small conference rooms to grow informality in education.

Data Sheet

Architectural Research Goals

- a. Accessibility of the Research Center to all people on the campus
- b. Noise control
- c. Compromise between the flexibility of the space with the privacy of the offices
- d. More space for books
- e. More space for storage
- f. A special space for casual work (e.g., drawing and cutting).

Data Sheet

Architectural History Goals

- a. Stimulation of informal education having small classes of eight or ten students who can easily participate in class discussions
- b. Faculty-seminar type of classroom where the teacher works and holds the class-seminars
- c. Small classrooms instead of large ones, and more classrooms. (e.g., one big space may be partitioned to form small seminar rooms
- d. Study rooms for Architectural History courses with slide-photo display facilities

Data Sheet

Visual Communication Goals

- a. Optimal lighting, daylight or direct light for exact coloring and shadowing
- b. Storage space for materials
- c. Lockers
- d. Separate space allocation for photography, sculpture and drawing-painting
- e. Being in the same building with the other subdivisions of Architecture

Data Sheet

Administrative Goals

- a. The administrative offices should be in easy access of one another for information exchange and personnel contact.
- b. Openness of the administrative offices - office landscape.
- c. Accessibility of the offices to the students.
- d. Privacy of the offices.
- e. Provision of the faculty - administrative offices with facilities, such as water and good heating system.
- f. More book space in the offices.
- g. Ideal work condition: maximum two people in the same office, preferably one.

Data Sheet

Support and Service Group Goals

(e.g., Secretary, Librarian and Technician)

- a. More work space for the secretaries
- b. Adequate book shelves and storage space for the secretaries
- c. Noise control for the secretarial work
- d. Accessibility of the secretaries to the people served as well as provision of the privacy of work
- e. Nice view of outside
- f. For the technician space twice as big as the existing one
- g. Repair space as an addition to the technician's office
- h. More chairs for the technician's office
- i. Better lighting and ventilation
- j. Centralization of the location of the technician's office
- k. More library staff
- l. More library space of good quality
- m. Reference desk in the library
- n. Flexible slide space in the library
- o. Place for books in the library
- p. Centrality of the location of the library
- q. Private work space for the librarians
- r. General quiet study space and a separate socializing space in the library
- s. Controllability of the library

Data Sheet

Building Construction Goals

- a. Having all space accommodations in the same building instead of in different buildings. (e.g., now Old Civil Engineering and New Civil Engineering Buildings are used).
- b. Building Construction should have an identifiable space of its own in the Addition
- c. Flexibility within the spaces allocated the Building Construction Department
- d. Classrooms, conference rooms and laboratory spaces should be improved
- e. Faculty offices should be improved in quantity, quality and the proximity to the classrooms

Data Sheet

Industrial Design Goals

- a. Motivating the student to work at school instead of at home by providing him classroom study facilities
- b. Exhibit space to support the visibility of work
- c. Locked-up work studios for safety
- d. Equipment to be integrated to the design of work space (e.g., furniture as the divider of the space rather than wall as the barrier. Furniture as a means of flexibility).
- e. Lockable storage space integrated into study area

Table 3. Ranking of General Goals of the Addition.
(1-most important, 9-least important)

PARTICIPANT GOALS	ARCHITECTURAL ADMINISTRATION		ARCH. DESIGN	ARCH. RESEAR	ARCH. HISTORY	VISUAL COMM.	SUPPORT AND SERVICE			ARCHITECTURAL DESIGN		INDUS. DESIGN	BUILDING CONSTRUCTION		TOTAL	PRIORITY
	ASS. DIR. + TEACH.	DES. HEAD + TEACH.	TEACH.	HEAD + TEACH.	TEACH.	TEACH.	LIBR.	TECHN.	SECR.	STUDENT (SR)		DIR. TEACH.	STUDENT	DIR. TEACH.		
	JOSEPH SMITH	RUFUS HUGHES	CHERYL MORGAN	JOHN TEMPLER	FRANK BECKUM	ALBERT SMITH	JAN CHAND.	CARL FINCH	RUTHIE WALTERS	JOHN HAND	ROGER MILLER	LEE PAYNE	HAROLD COOPER	ROBERT YOUNG		
C. FUNCTIONAL	1	1	2	1	1	1	1	7	9	2	2	1	1	5	35	1
D. AESTHETICAL, ETHICAL	2	2	1	4	2	7	3	6	5	1	7	5	8	7	60	4
C. CONCEPTUAL	3	6	9	8	9	8	4	8	7	9	9	8	4	6	98	9
D. ENERGY R.	4	7	4	6	5	2	8	9	6	7	4	6	6	8	82	6
E. BUDGETARY	9	9	6	5	8	4	9	5	8	8	5	3	2	1	82	6
F. FLEXIBILITY	6	5	7	2	7	5	5	1	3	3	1	2	9	2	58	3
G. INTERACTION	5	4	3	3	4	3	6	2	2	4	3	4	7	3	53	2
H. EDUCATIONAL	7	3	5	9	6	9	2	3	1	6	8	7	3	4	73	5
I. LIBRARY STUDY	8	8	8	7	3	6	7	4	4	5	6	9	5	9	89	8

Table 4. Ranking of Architectural Design Goals.
(1-most important, 7-least important)

GOALS	TEACHERS		STUDENTS		TOTAL	PRIORITY
	CHERYL MORGAN	JOSEPH SMITH	ROGER MILLER	JOHN HARD		
a	6	7	6	7	26	6
b	1	1	3	2	7	2
c	2	2	1	1	6	1
d	5	4	7	5	22	5
e	4	5	4	3	16	4
f	7	6	8	6	27	7
g	3	3	2	4	12	3

Table 5. Ranking of Architectural Research Goals.
(1-most important, 6-least important)

GOALS	HEAD TEACHER	TOTAL	PRIORITY
	JOHN TEMPLER		
a	3	3	3
b	4	4	4
c	1	1	1
d	6	6	6
e	5	5	5
f	2	2	2

Table 6. Ranking of Architectural History Goals.
(1-most important, 4-least important)

	TEACHER		
GOALS	FRANK BECKUN	TOTAL	PRIORITY
a	1	1	1
b	4	4	4
c	3	3	3
d	2	2	2

Table 7. Ranking of Usual Communication/Goals.
(1-most important, 5-least important)

	TEACHER		
GOALS	ALBERT SMITH	TOTAL	PRIORITY
a	1	1	1
b	3	3	3
c	4	4	4
d	2	2	2
e	5	5	5

Table 8. Ranking of Administrative Goals.
 (1-most important, 7-least important)

	ASST. DIR.	UNDR. DESIGN	IND. DESIGN		
GOALS	JOSEPH SMITH	RUFUS HUGHES	LEE PAYNE	TOTAL	PRIORITY
a	5	4	5	14	4
b	7	7	7	21	7
c	1	1	1	3	1
d	2	2	2	6	2
e	4	6	4	14	4
f	6	5	6	17	6
g	3	2	3	8	3

Table 9. Ranking of Support and Service Group Goals.
(1-most important, 19-least important)

GOALS	LIBR.	TECHN.	SECR.	TOTAL	PRIORITY
a	10	2	3	15	1
b	12	3	2	17	4
c	13	1	5	21	5
d	11	4	1	16	2
e	18	19	4	41	18
f	14	12	10	36	14
g	15	11	14	40	17
h	19	18	19	56	19
i	16	17	4	37	16
j	17	6	13	36	14
k	3	5	8	16	2
l	1	13	7	21	5
m	8	7	16	31	9
n	9	8	17	34	13
o	4	9	18	31	9
p	6	10	15	31	9
q	5	14	12	31	9
r	2	16	11	29	8
s	7	15	6	28	7

Table 10. Ranking of Building Construction Goals.
(1-most important, 5 least important)

	DIR. TEACHER	STUDENT		
GOALS	ROBERT YOUNG	HAROLD COOPER	TOTAL	PRIORITY
a	3	1	4	1
b	1	4	5	2
c	5	2	7	4
d	2	3	5	2
e	4	5	9	5

Table 11. Ranking of Industrial Design Goals.
(1-most important, 5-least important)

	DIR. TEACHER		
GOALS	LEE PAYNE	TOTAL	PRIORITY
a	1	1	1
b	5	5	5
c	4	4	4
d	2	2	2
e	3	3	3

Overall Ranking of Goals of the Addition from the Experiment

Table 12. Ranked Goals.

Priority No.	GENERAL GOALS EXPECTED FROM THE ADDITION
1.	<u>FUNCTIONAL</u> - EASILY ACCESSIBLE, FUNCTIONAL IN ALL SYSTEMS INCLUDING STRUCTURAL AND MECHANICAL. "COMMODITY, FIRMNESS AND DELIGHT"
2.	<u>INFORMATION EXCHANGE AND SOCIAL RELATIONS (INTERACTION)</u> - BUILT FORM SHOULD FACILITATE THE RELATIONSHIP AND INTERACTION OF ALL STUDENTS ON THE CAMPUS AS WELL AS STUDENTS AND FACULTY MEMBERS. THEREFORE, THE BUILDING SHOULD PROVIDE THE INTER-DEPARTMENTAL EXCHANGE BY HAVING ALL SUBDIVISIONS OF ARCHITECTURE (e.g., VISUAL COMMUNICATION) AND DIVISIONS OF COLLEGE OF ARCHITECTURE (e.g., BUILDING CONSTRUCTION AND INDUSTRIAL DESIGN) TOGETHER IN THE SAME BUILDING. RECESSED HALLS ALONG THE CORRIDORS FOR CASUAL INTERACTION AND RELAXATION SPACE FOR STUDENTS AND TEACHERS TO TALK, DRINK AND READ-LIKE LOUNGE.
3.	<u>FLEXIBILITY-MAXIMIZATION OF FLEXIBILITY AND ACCESSIBILITY</u> TO ACCOMMODATE POSSIBLE PROGRAMMATIC CHANGES IN THE FUTURE. THE PROGRAM OF THE ADDITION TO ARCHITECTURE BUILDING SHOULD BE BASED ON THE EXISTING BUILDING PROGRAM AND EDUCATIONAL SYSTEM, AND SHOULD RESPOND TO THE ANTICIPATED CHANGE IN THE STUDENTS AND THE PROGRAM IN THE FUTURE. (e.g., TWO-STORY SPACE TO BE DESIGNED FOR FUTURE USE OF ANY FUNCTION).
4.	<u>AESTHETICAL-ETHICAL</u> - WELL-LIGHTED, EXCITING, VISUALLY STIMULATING, INVITING INTERNAL AND EXTERNAL PHYSICAL ENVIRONMENT. THE LOOK OF THE BUILDING MUST BE GOOD AND IN HARMONY WITH THE NEIGHBORING BUILDINGS ON THE CAMPUS. (e.g., EE BUILDING AND EXISTING ARCHITECTURE BUILDING). PSYCHOLOGICALLY RESPONSIVE TO THE BEHAVIOR OF PEOPLE USING THE BUILDING

Table 12. (Continued)

5. EDUCATIONAL - CHANGE FROM FORMAL TO INFORMAL EDUCATION IN WHICH THE ELEMENT OF FUN INCLUDED TO MAKE THE EDUCATION NON-OPPRESSIVE. THE BUILT FORM SHOULD ATTEMPT TO RESPOND TO IT.
6. BUDGETARY - MAXIMUM UTILITY WITH THE MINIMUM COST. BALANCING THE ALTERNATIVES OR POSSIBILITIES WITH THE RESOURCES TO ASSESS THE REALITY.
6. ENERGY CONSERVATION CONCEPT-SHOULD BE REFLECTED IN THE BUILDING BY SOME MEANS.
8. LIBRARY STUDY - QUIET STUDY IN THE LIBRARY SHOULD BE PROVIDED; CARREL STUDY CAN BE ENCOURAGED. THE LIBRARY SHOULD BE INVITING, ACCESSIBLE AND QUANTITATIVE IN SPACE. CLOSE AND LOCKED-UP SPECIAL SLIDE SECTION AND CONTROLLABILITY SHOULD BE PROVIDED.
9. CONCEPTUAL - ARCHITECTURE BUILDING SHOULD BE A TRANSPARENT FACTORY, OBSERVABLE SPACE, AN EXPOSED BUILDING HAVING ALL STRUCTURAL SYSTEMS APPARENT AS MEANS OF TEACHING.

Table 13. Ranked Goals.

Priority No.	ARCHITECTURAL DESIGN GOALS
1.	BRINGING TOGETHER OF ALL THE DESIGN LEVELS INTO THE SAME BUILDING. (FROM FREEHAND DRAWING BUILDING, OLD CIVIL ENGINEERING, NEW CIVIL ENGINEERING AND ENGINEERING SCIENCE MECHANICS BUILDING) TO HAVE COMMUNICATION BETWEEN ALL LEVELS OF DESIGN STUDENTS AND TO ACHIEVE COMPREHENSIVE STUDENT-TO-STUDENT TEACHING: CENTRALIZATION OF DESIGN COURSES INSTEAD OF ISOLATION OF THEM.
2.	STUDIOS SHOULD BE FLEXIBLE SO CHANGEABLE INTO SMALL OR LARGE SPACES FOR WORKING GROUPS OF DIFFERENT SIZES, OR CLASSROOMS.
3.	SEMINAR ROOMS AND SMALL THEORY CLASSROOMS AND SMALL CONFERENCE ROOMS TO GROW INFORMALITY IN EDUCATION.
4.	LOCKABLE WORK SPACES IN DESIGN LABS.
5.	PERSONAL WALL SPACE IN STUDIOS FOR EXHIBIT IN ADDITION TO ADEQUATE CHALK AND BLACKBOARD AS WELL AS GENERAL EXHIBIT SPACE.
6.	OPEN SYSTEM OF DESIGN STUDIOS WITHOUT ANY PHYSICAL BARRIER BETWEEN VARIOUS DESIGN LEVELS FROM FRESH-MAN TO GRADUATE (NO HORIZONTAL AND/OR VERTICAL SEPARATION).
7.	BOOK SPACE IN DESIGN STUDIOS.

Table 14. Ranked Goals.

Priority No.	ARCHITECTURAL RESEARCH GOALS
1.	COMPROMISE BETWEEN THE FLEXIBILITY OF THE SPACE WITH THE PRIVACY OF THE OFFICES.
2.	A SPECIAL SPACE FOR CASUAL WORK (e.g., DRAWING AND CUTTING).
3.	ACCESSIBILITY OF RESEARCH CENTER TO ALL PEOPLE ON THE CAMPUS.
4.	NOISE CONTROL.
5.	MORE SPACE FOR STORAGE.
6.	MORE SPACE FOR BOOKS

Table 15. Ranked Goals.

Priority No.	ARCHITECTURAL HISTORY GOALS
1.	STIMULATION OF INFORMAL EDUCATION. HAVING SMALL CLASSES OF EIGHT OR TEN STUDENTS WHO CAN EASILY PARTICIPATE IN CLASS-DISCUSSIONS.
2.	STUDY ROOMS FOR ARCHITECTURAL HISTORY COURSES WITH SLIDE-PHOTO DISPLAY FACILITIES.
3.	SMALL CLASSROOMS INSTEAD OF LARGE ONES AND MORE CLASSROOMS. (e.g., ONE BIG SPACE CAN BE PARTITIONED TO FORM SMALL SEMINAR ROOMS.
4.	FACULTY-SEMINAR TYPE OF CLASSROOM WHERE THE TEACHER WORKS AND HOLDS THE CLASS-SEMINARS.

Table 16. Ranked Goals.

Priority No.	VISUAL COMMUNICATION GOALS
1.	OPTIMAL LIGHTING: DAYLIGHT/DIRECT LIGHT FOR EXACT COLORING AND SHADOWING.
2.	SEPARATE SPACE ALLOCATION FOR PHOTOGRAPHY SCULPTURE AND DRAWING-PAINTING.
3.	STORAGE SPACE FOR MATERIALS
4.	LOCKERS.
5.	BEING IN THE SAME BUILDING WITH THE OTHER SUB DIVISIONS OF ARCHITECTURE.

Table 17. Ranked Goals.

Priority No.	ADMINISTRATIVE GOALS
1.	ACCESSIBILITY OF OFFICES TO STUDENTS.
2.	PRIVACY OF THE OFFICES.
3.	IDEAL WORK CONDITION: MAXIMUM TWO PEOPLE IN THE SAME OFFICE, PREFERABLY ONE.
4.	THE ADMINISTRATIVE OFFICES SHOULD BE IN EASY ACCESS OF ONE ANOTHER FOR INFORMATION EXCHANGE AND PERSONNEL CONTACT.
4.	PROVISION OF FACULTY ADMINISTRATIVE OFFICES WITH FACILITIES LIKE WATER AND GOOD HEATING SYSTEM.
6.	MORE BOOK SPACE IN THE OFFICES.
7.	OPENNESS OF ADMINISTRATIVE OFFICES. OFFICE LANDSCAPE.

Table 18.

Ranked Goals.

Priority
No.SERVICE GROUP (SECRETARY, LIBRARIAN,
GOALS TECHNICIAN)

1. MORE WORK SPACE FOR THE SECRETARIES.
2. MORE LIBRARY STAFF.
2. ACCESSIBILITY OF THE SECRETARIES TO THE PEOPLE SERVES AS WELL AS PROVISION OF THE PRIVACY OF WORK.
4. ADEQUATE BOOK SHELVES AND STORAGE SPACE FOR THE SECRETARIES.
5. NOISE CONTROL FOR THE SECRETARIAL WORK.
5. MORE LIBRARY SPACE OF GOOD QUALITY.
7. CONTROLLABILITY OF THE LIBRARY.
8. GENERAL QUIET STUDY SPACE AND A SEPARATE SOCIALIZING SPACE IN THE LIBRARY.
9. REFERENCE DESK IN THE LIBRARY.
9. PLACE FOR BOOKS IN THE LIBRARY.
9. PRIVATE WORK SPACE FOR THE LIBRARIANS.
9. CENTRALITY OF THE LIBRARY
13. FLEXIBLE SLIDE SPACE IN THE LIBRARY.
14. CENTRALIZATION OF THE LOCATION OF THE TECHNICIAN'S OFFICE.
14. FOR THE TECHNICIAN SPACE TWICE AS BIG AS THE EXISTING ONE.
16. BETTER LIGHTING AND VENTILATION.
17. REPAIR SPACE AS AN ADDITION TO THE TECHNICIAN'S OFFICE.
18. NICE VIEW OF OUTSIDE (ESPECIALLY FOR SECRETARY).
19. MORE CHAIRS FOR THE TECHNICIAN'S OFFICE.

Table 19. Ranked Goals.

Priority No.	BUILDING CONSTRUCTION GOALS
1.	HAVING ALL SPACE ACCOMMODATIONS IN THE SAME BUILDING INSTEAD OF IN DIFFERENT BUILDINGS. (e.g., NOW OLD AND NEW CIVIL ENGINEERING AND NEW CIVIL ENGINEERING ARE USED).
2.	CLASSROOMS, CONFERENCE ROOMS AND LAB SPACES SHOULD BE IMPROVED.
2.	BUILDING CONSTRUCTION SHOULD HAVE AN IDENTIFIABLE SPACE OF ITS OWN IN THE ADDITION.
4.	FLEXIBILITY WITHIN THE SPACES ALLOCATED TO THE BUILDING CONSTRUCTION DEPARTMENT.
5.	FACULTY OFFICES SHOULD BE IMPROVED IN QUANTITY, QUALITY AND THE PROXIMITY TO THE CLASSROOMS.

Table 20. Ranked Goals.

Priority No.	INDUSTRIAL DESIGN GOALS
1.	MOTIVATING THE STUDENT TO WORK AT SCHOOL INSTEAD OF HOME BY PROVIDING HIM CLASSROOM- STUDY FACILITIES.
2.	EQUIPMENT TO BE INTEGRATED TO THE DESIGN OF WORK SPACE (e.g., FURNITURE AS THE DIVIDER OR SPACE RATHER THAN WALL AS THE BARRIER. FURNITURE AS A MEANS OF FLEXIBILITY.
3.	LOCKABLE STORAGE SPACE INTEGRATED INTO STUDY AREA.
4.	LOCKED-UP WORK STUDIOS FOR SAFE STUDY.
5.	EXHIBIT SPACE TO SUPPORT THE VISIBILITY OF WORK.

Findings

In this limited experiment it was difficult to induce people to volunteer, to participate in the experiment. The first notice did not appeal to anyone; nobody signed the list. This might possibly be due to:

- a. lack of time by people
- b. lack of interest of people
- c. strong reaction aroused in students and faculty against the presented design of the Addition to the Architecture Building
- d. lack of attractiveness of the notice
- e. unimportance of the research experiment from the people's point of view

However, after the first attempt to get the volunteer participants, the situation shifted completely; when the individuals were individually asked to participate, out of twenty people whom I asked to participate, only 1 (5%) declined the invitation to the discussions and only 5 out of 19 could not keep their promise (20%). Therefore, participation was achieved with approximately 80% success. The possible reasons of those who were asked and agreed but who could not attend the discussions were:

- a. There were only four possible meeting dates scheduled. The volunteer's free time did not fit any of those dates
- b. Unexpected and more important events interfered. Their attendance was already signed for the day (e.g., going out of town).
- c. Feeling of inferiority

One person who refused to participate from the start explained his reason as unwillingness to get involved in a subject which has something to do with the Addition to the Architecture Building. This fear could be due to:

- a. his personality
- b. the heated argument regarding the subject in school

Discussions were calm and informal; and a considerable amount of interaction occurred within the groups. They asked each other questions as reaction to his/her statement of goals. Although everybody was given turns to express his/her expectations from the Addition, the interaction helped stimulate his/her mind to go back and express some other goals even after his/her turn had passed.

The group discussions helped the individuals to become very quickly involved in the purpose of this research, and almost everybody responded in the right direction: in terms of goals rather than sheer solutions.

The second group was especially active. Almost every issue advanced by each individual was responded to by every other member in the group.

Except for few issues there was agreement in each group. One example to exception was that the Visual Communications representative had no will to move his department from the Freehand Building to the Addition for interdepartmental interaction. He based his reason on the fact that he was quite content with the classroom and office accommodations in isolation. This was very contrary to all other members who joined in all discussions.

Almost every general goal was responded in wide range of priority. There were people who considered one goal as the most important of all, while some others thought that the very same goal was the least important of all. Even the goal "functional" which got the most steady answer as the most important goal, was ranked by two people as the least important.

In the determination of the priority of the general goals there was no tendency specified to one group.

It seems that people feel that their contribution is much more important when they are individually asked to participate.

The formation of the groups were unbiased because the composition of the groups were determined by the time factor, each member would choose, not the friends for discussion, but one out of the four possible days suiting his free time. Therefore, although limited, the results are reliable in the framework of this experiment.

The issues were to be raised by the user participants rather than to be imposed on users through the designer, who might have biases.

The results of the discussions were fed back to the participants in the second phase; ranking the goals. Also the overall rankings were given to the interested participants to feed back to the Committee for the program of the Addition. So the continuity of the process and the link between the user participants and the designer were obtained.

Having the group discussions to establish the goals had some advantages as listed below.

- a. Stimulation of initiation in members to identify and express their opinions on their needs.
- b. Motivation to discuss; in form of reaction to one-another's opinion.
- c. Application of Unitary Theory rather than the Individualistic Theory.

$$\text{GOAL}_{\text{whole}} > \sum \text{GOAL}_{\text{individual}} \quad \text{rather than} \quad \text{GOAL}_{\text{whole}} = \sum \text{GOAL}_{\text{individual}}$$

- d. Creativity in generation of the issues.

Goals of the Addition from the Documents³⁷

General Goals. a. Preparing academic programs in which the attention and the emphasis is on activity and excitement of satisfaction to yield concentration to produce best work. To attain this goal one of the objectives is to develop formalized internship or preceptorship to complement the academic program. The actions to achieve it are including courses within professional sphere, and having off-campus instruction: foreign studios program and co-op program, and city teaching. (Atlanta being a booming city, it should become a classroom for the teaching of Architecture). Second objective is to offer more lectures and open debates. The actions to achieve it are programming self-analysis lecture series to stimulate awareness, having small classes of twelve to eighteen to evoke discussion and having very small meetings, five to eight students and the instructor outside the class.

b. Integrating the faculty-student and the practitioner. One way of achieving it can be provision of easy access of faculty members to students.

c. Inclusion of residential accommodation, sleeping and eating to a certain extent, to be a part of the creative process.

d. Bringing together all design levels into the building. The drawing studio should contain personal cubicles, split levels and be open to be capable of being split into smaller class spaces. Each individual should be provided by a design or drafting table. For lower level design classes, like freshmen and sophomore, the design lab

can be open type to encourage the interaction among the students as well as between the students and teachers. For higher level design classes, junior, senior and graduate students, the studios can have open arrangement partitions so as to give the student greater privacy out of the area of high level of interaction.

e. Large, flexibly arranged and equipped model building area especially for the third year architects to replace the Subterranean Corridor of the Mechanical plant rooms converted for one class.

f. Student study rooms and study carrels

g. Tiny space and specialized classrooms for criticism on preliminary or finished projects, demonstrations and data collection. They should be equipped with display boards, minor projection machines. Also, two large classrooms for History of Architecture with projection facilities, for flexible scheduling. Classroom space for future service courses in Arts and Humanities. Four lecture rooms for the Architectural design.

h. Seminar rooms (three) for City Planning and Architecture. Two seminar rooms to replace the existing one so that it can function as an office. Combined seminar and student reading room equipped with tables and chairs and book shelves.

i. In the library space for mimeographing; photocopy, and reproduction; more space for shelving the graduate materials; archives for storing drawings, maps and models; space for periodical-stack display, office and work room for the librarians; a separate room, but connected to the library to put City Planning Pamphlet and slide files; place for rare books and book reference; work places for copying,

preparing and filing slides and graphic material; Library reading lounge; carrel study provisions, and a quiet study room.

j. Darkroom

k. Lounge

l. Exhibition space

m. Circulation space, toilets and mechanical spaces

n. Faculty offices

Architectural Design Goals. a. Gathering all levels of design students in the same building. Visual Communication from the Freehand Building, lower level design students from the Brown dorm, upper level design students from Engineering Science Mechanical Building.

b. Increasing faculty-student relationship in design process for criticism and advice (e.g., having the student and the teacher critique the same building).

c. Obtaining a more flexible curriculum by getting rid of the year system; offering a variety of courses in new subjects such as Acoustics and Lighting; increasing the number of electives in senior and graduate level and reducing the required courses to the minimum core; and providing additional tracks for specialization at graduate level.

d. Integrating new course offerings with the Structure and Mechanical System Design courses through team teaching effort of the teachers of those courses, and design courses.

e. Emphasizing computer education more due to its broad use in Architecture.

Architectural Research Goals. a. Development of a Research Program in Architecture.

b. Development of a more diverse faculty

c. Encouragement of student participation in research. One way to achieve this goal is to include into the academic program in Architecture, the option of research oriented activity rather than the traditional design studio. Another way is to increase the school's participation in professional development and continuing education programs.

d. One room for the research director and one for the secretary.

Visual Communication Goals. a. A more Audio-Visual based education is necessary because audio-visual communication is demanded by research centers, talks, courses and work experience documents.

b. Photography teaching studio

c. Faculty offices

d. Art space to accommodate art-related activity having the audio-visual training facilities like slide viewing equipment, video-tape equipment and teaching machine.

e. Storage space for freehand drawing

f. Specialized laboratories for computer graphics

g. Studios

h. Classrooms

Building Construction Goals. a. Giving the opportunity to the advanced students in Architecture and faculty to research on material of construction assembly methods and model analysis.

b. Building materials display space

c. Material testing laboratory

- d. Structural model testing laboratory
- e. Four rooms for Structural and Mechanical Equipment Courses
- f. Two studios to serve a hundred people
- g. Computer space
- h. Cost estimating space

Industrial Design Goals

- a. Providing campus-wide offerings in studio courses to meet current Industrial Design needs
- b. Providing adequate number of faculty
- c. Office space for additional faculty
- d. Rough space for heavy model building
- e. Machine shops
- f. Additional shop space (now insufficient for even small classes in Industrial Design) not only for Industrial Design Students but other students on campus as well.
- g. Industrial Design Lab: Draftsrooms for forty students
- h. Classrooms for progress courses in Architecture and Building Practice
- i. Specialized classrooms for criticism projects and unfinished projects and industrial setting.
- j. Storage to retain student work in the form of drawing models and full scale industrial designs for exhibitions to show younger students

Comparison of Goals from the Experiment to the Goals by the Documents

Generally the goals of function and interaction are common in both.

Privacy and accessibility of the faculty offices was issued at the discussions but not mentioned in the documents.

The document showed that the optimum Architectural Design Studios could be of two types: open studio for lower levels and different studio type offering privacy to higher levels of students. However, the experiment groups favored mostly one type of design studio with no horizontal or vertical barriers to separate lower and higher design levels.

Need for residential accommodation like sleeping and eating to a certain extent was indicated in the documents; but the very same expectation was not felt as an urgent need during the discussions.

In the discussions, one of the issues was changing the education from formal to informal, and adding the element of fun to which the built form should respond. This goal was ranked as the sixth important goal out of nine. However, such a need was not indicated in the documents of the program of the Addition.

The Architectural History need as small classrooms for small numbers of students was expressed in the discussions and was demanded as a general goal by the Building Committee on the documents but not that they needed to be faculty-office seminar type of rooms to stimulate an informal education. The need for study rooms for students as issued in the discussions was generally felt as a need for all students in general.

The needs related to library lounge and exhibit space were expressed in both cases with a small difference that the lounge, as was expressed in the discussions as a more controllable space near the library.

The secretarial goals were expressed more qualitatively in the discussions while the documents were more prescriptive rather than in the form of performance requirements. For example, accessibility of the secretaries to the people served as well as the provision of the privacy of their work was a strongly felt need as expressed in the discussions.

For the Visual Communication the goals expressed in the discussions were more qualitative, whereas, the ones stated in the documents were more quantitative: Optimal lighting, and separation of spaces for sculpture, drawing and painting were mentioned during the experiment. Except for the common goal of storage space, surprisingly, enough Visual Communications was not in need of many spaces although it seemed so in the documents.

In the discussions, Architectural Research demanded accessibility of the Research Center to all people on the campus, a need not mentioned in the documents at all. Nor was the need for compromise between the privacy of the offices and the flexibility of the space mentioned, although it was ranked as the most important goal in the experiment. Storage and book space needs were not expressed in the documents.

For Building Construction, the need for spatial accommodation was the common issue in the discussions and the documents. But in the experiment, more than the number of spaces, the need for having all space accommodations in the same building instead of separate buildings was a far more important goal. In fact, it was listed as the most important goal. Also, the need for an identifiable space, but flexible,

within the department was advanced only in the discussions and was not mentioned in the documents at all. Nor was the proximity of Building Construction faculty offices to the proximity of the classrooms mentioned.

For Industrial Design, the need for studios and for storage space was expressed both in the discussions and the documents; however, their performance requirements, such as equipment-integrated design of the studios, their flexibility and lockable storage space integrated into study area were felt as important needs only in the discussions. The goal ranked as the first of all in the discussions was on motivating the student to work at school instead of home by providing him classroom study facilities: this goal was not programmed in the documents.

The documents implied that the budgetary goal was very important. However, the experiment results showed that it was ranked sixth; as quite unimportant when compared to the goals of function, interaction, flexibility, aesthetics and education.

The aesthetical qualities that the Addition was supposed to have as an exciting environment was an important goal issued at the discussions but not in the documents.

There was no site-related goal in the documents to indicate that the Addition should harmonize with the buildings around, like the Electrical Engineering and Architecture Building. Yet, this goal was advanced by the discussion participants.

Conclusions

It seems that the faculty members were the group most involved in the design decisions of the Addition. Other types of users, such as

a greater number of students, could have participated in the programming and the design of the project.

Even if there was a lack of time or if the students were not formally organized, at least a survey could have been made of student opinions. The programmatic issues prepared and generated by the Building Committee could have been circulated among the user groups to get their response to the program since each type of user knows his individual needs better than anybody else.

Then each decision of the Committee could have been made public through newspapers or posting so that the communication between the user groups and the designers could have been achieved by the Building Committee.

As the "comparison" part of the experiment indicated quite openly, the discrepancy of the results of the experiment and the Building Committee could have been compensated if more groups of variety of users (more than there was in the Committee) were to be involved to discuss the goals.

Recommendations

What can be done to improve the situation now? The design period of the Addition is extended six weeks due to strong student-faculty oppositions. In the meanwhile, the students are advised by the Building Committee to direct the criticisms as every new sketch is developed by the architectural firm. They will be posted as soon as issued. Since the end of spring quarter is near, each student is busy with his design project. Therefore, it is unlikely that students can commit time to analyze the documents. However, if the design can be

given as a short term design problem to those who proved to be very much interested by signing the petitions voluntarily; they can allocate their time and contribute to the design. Of, if the extension is to be extended more, the architectural firm can hire those students for the completion of the Addition during the Summer months.

CHAPTER V

CONCLUSION

A long term strategy for user participation needs to be taken. This would save a lot of troubles and time during each decision-making process. Starting with elementary school years, environmental awareness should be awakened in the children. At the same time, the planning issues relating to the community needs to be communicated to the students for stimulation of motivation for the user participation. Later at High School level, the students should learn how to express their feelings, opinions and needs verbally and schematically. Exercise would be helpful where they could react diagrammatically to the planning issues.

Unless the concept of participation is integrated into the goals of early education program, it will be very difficult to evoke the individuals at a later age or suddenly the need for participation and the importance of their contribution to design decisions.

Characteristics of A Good Method

Behavioral Study - Prescriptive of Correct Values

The real needs of the users cannot be expressed verbally; for their careful identification can be obtained through observation and experiencing of their behavior. Therefore, the architects should work in collaboration of human behavioral scientists like sociologists and environmental psychologists, because it is the dynamic behavior that supports the responsible design.

Research Oriented

The research studies should be surveyed to prove the success or failure.

Educative

People should be educated on participation; the importance of willingness and knowledge of designing for themselves and the stimulation of motivation to express their needs and opinions in a group, understanding of planning policies and techniques; rationale of thinking and decision making in planning.

Institutionally Organized

The participation problem should be taken into consideration and organized and funded by an institution (e.g., the Federal Government).

Transparently Processed

The participatory method should work as a transparent mechanism: data should be given to the user beforehand in order that he might form his opinions: All levels of institution should be consulted and satisfied.

Continuous Feedback

By feeding back the data on the users the designer can decide whether to continue in the direction undertaken or not. Even the post evaluation must be treated as an extension of participation.

Anticipative

Long term scenarios for user participation must be viewed. Two or more number of time scales can be thought. (e.g., ten years from now).

Initiative Taken By The Architect

To evoke collaborative work, to initiate the dialogue and stimulate interest and to break down the resistance of the user to change, the architect should form a good relation between the client and the change-agent.

Evocative Of Commitment of The User

Commitment of the user energy and time is necessary for effective participation. The commitment among administrators, planners and politicians are also necessary. Commitment of the user can be attained if he is convinced that his decisions are important.

Maximizing The Scope of Participation

Through information availability and provision of interaction, each individual can approach to participation as a process in which he has the right of influencing the environment about him.

Directness of the Method

The method should allow the citizens to influence directly all phases of the planning process. The people must represent themselves because they are the best experts on their own values, interests and needs. Also the users should be in direct contact with the designer.

Availability of A Number of Combinations for the Future User

A number of alternatives for the future user can be obtained through the method.

Encouraging Working With Small Groups

Groups to participate in the decision making process should not exceed a certain number to resolve the conflicts.

Evoking Participation Conformity Rather Than Participation Enmity

It should influence in the users the idea that it is through involvement and commitment of people that the solutions to the problem can be accomplished but not by the force of Governments.

Favoring (Advocating) the Minority Group

The method should give the minority group opportunity to express its interests. The designer upon awareness of the wide range of interests of various users must take the side of the unequipped.

Supportive of Financial Assistance

If loans are allocated to the users especially in dwellings by the government or other organizations, the people can do some work during and after the rehabilitation period of their houses.

Quick, Inexpensive But Effective

Very Simple

Planned

Time to be for participation should be scheduled and the process of participation itself must be designed.

Generalizable

Flexible, Long Term Usable

Less Dependent on Surveys

To prevent the risk of having the influence of the biased designer, other techniques can be used but the surveys might support the discussion technique.

More Discussion Oriented

The goals and alternative solutions should be promoted by the users in cyclic meetings, for the reconciliation of differing

decisions in two communities or within conflicting groups on a community. Each participant should be given the opportunity to express his ideas.

Letting the Articulation of Opinions of People With as Many Social and Demographic Contrasts as Possible

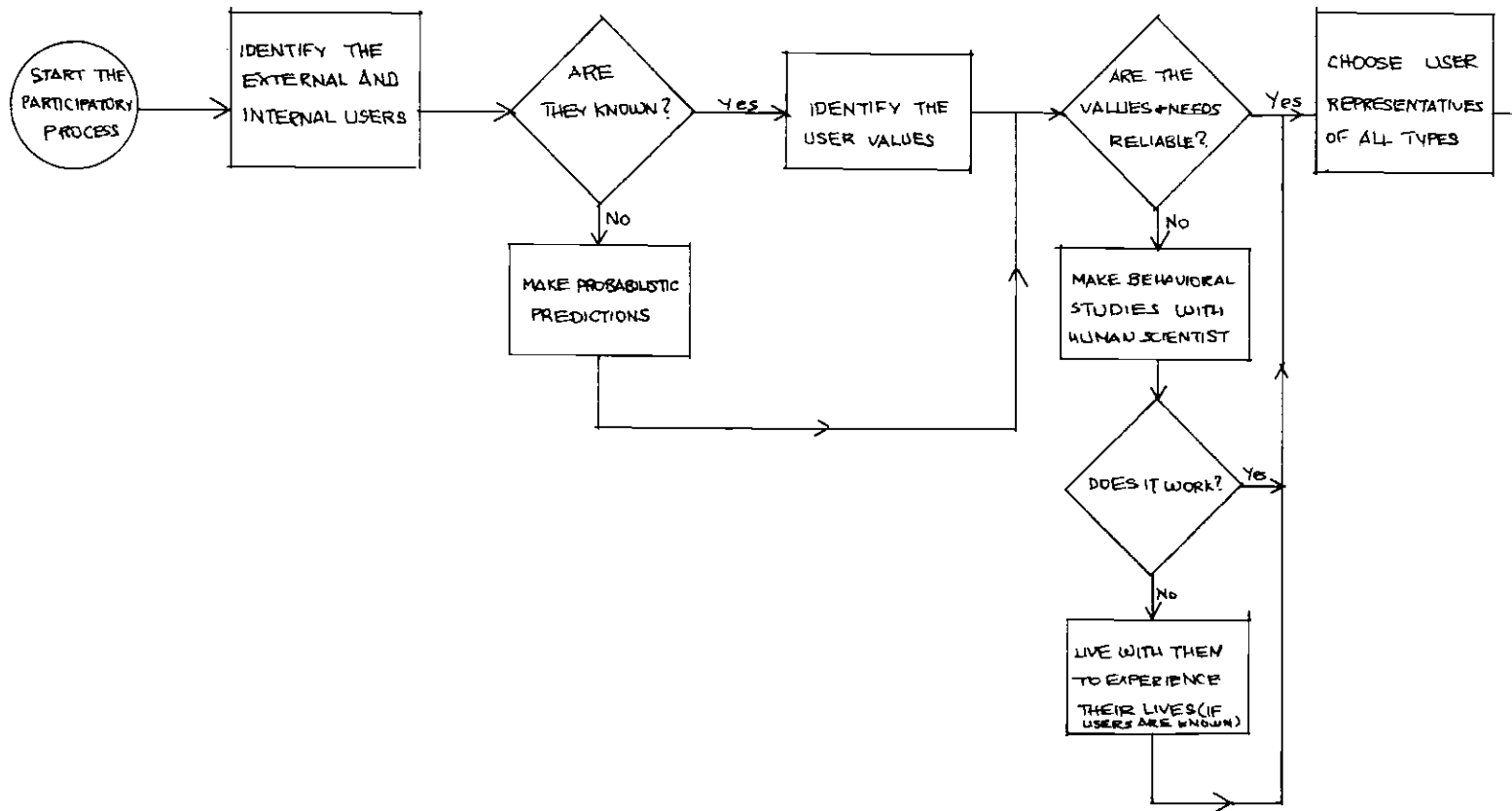


Figure 32. A Model for a User-Participatory Design Decision Process.

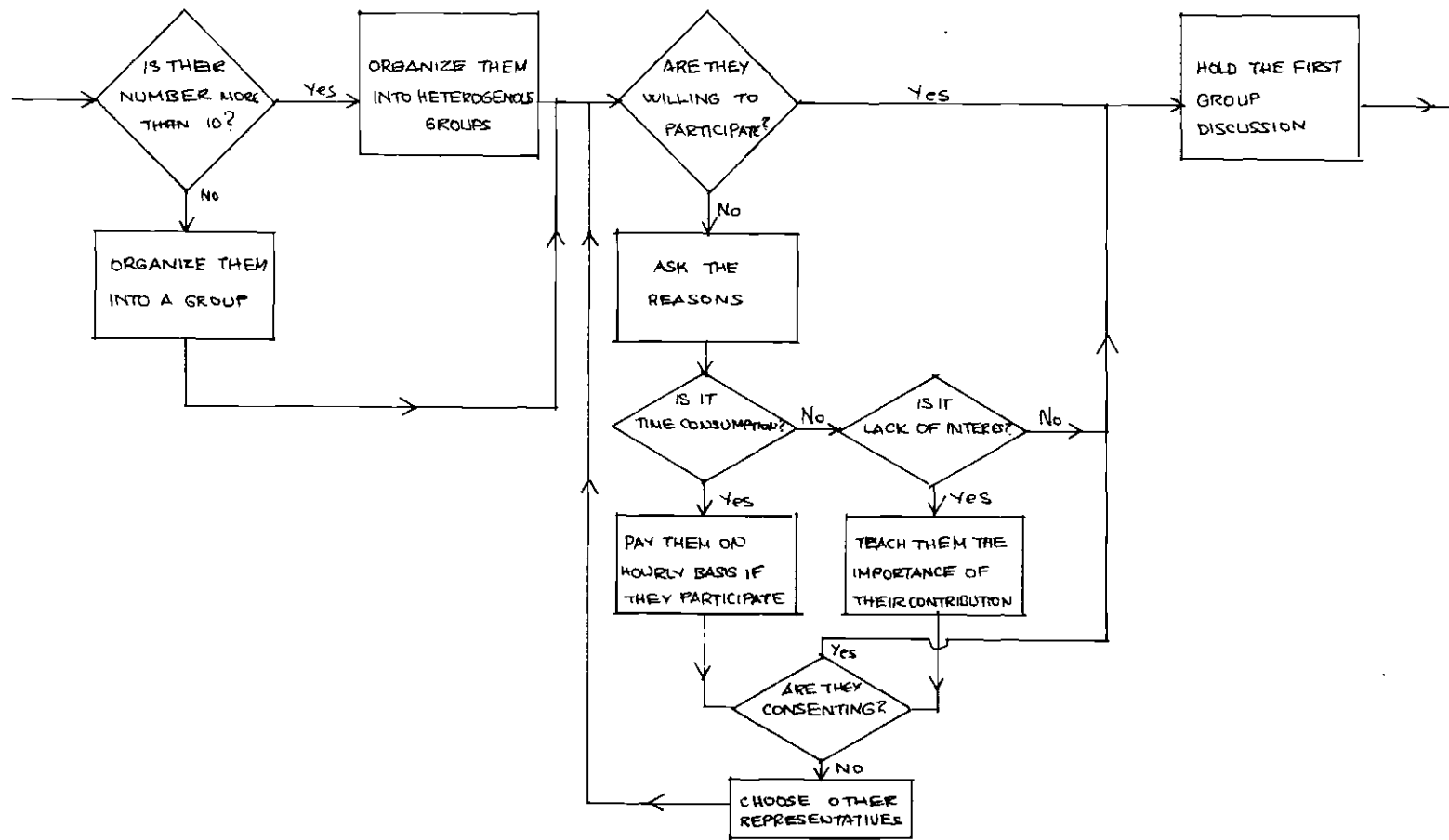


Figure 32 (Continued)

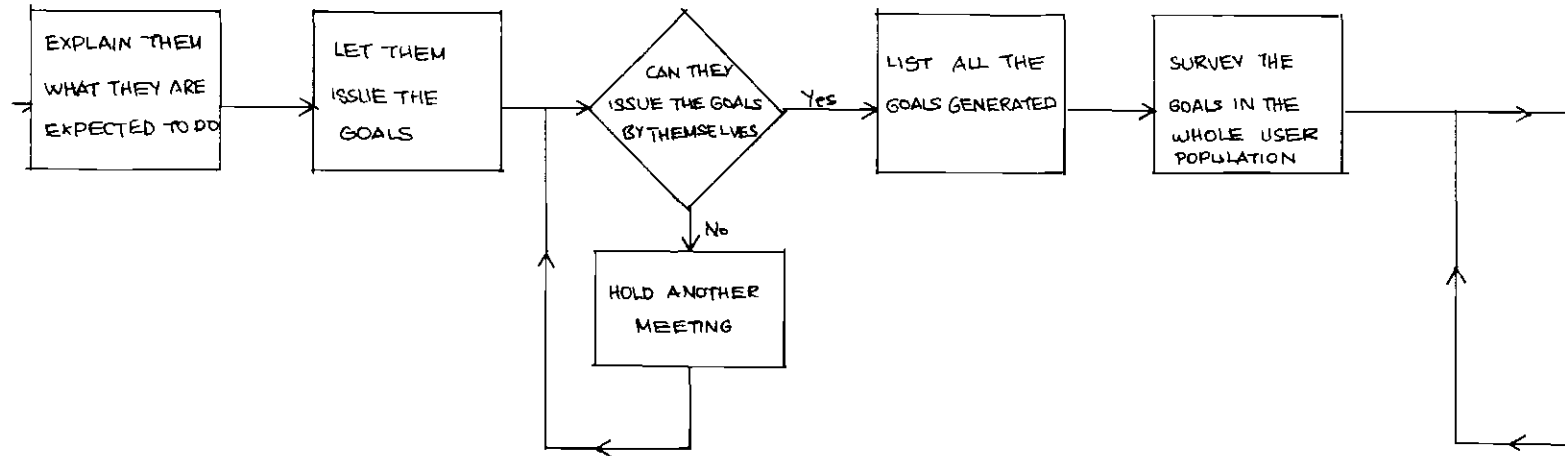


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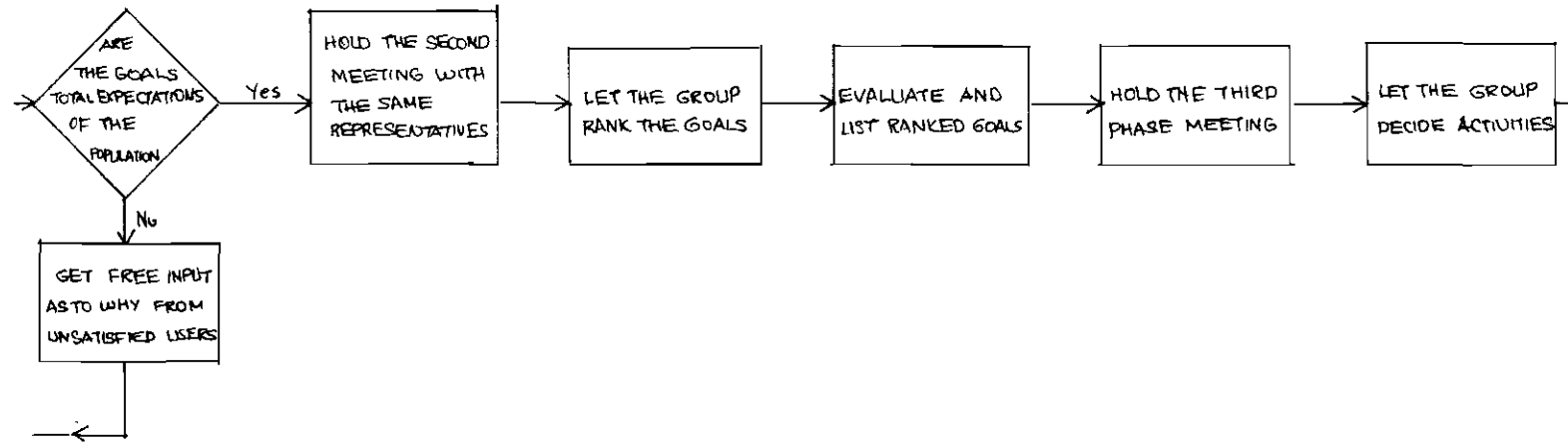


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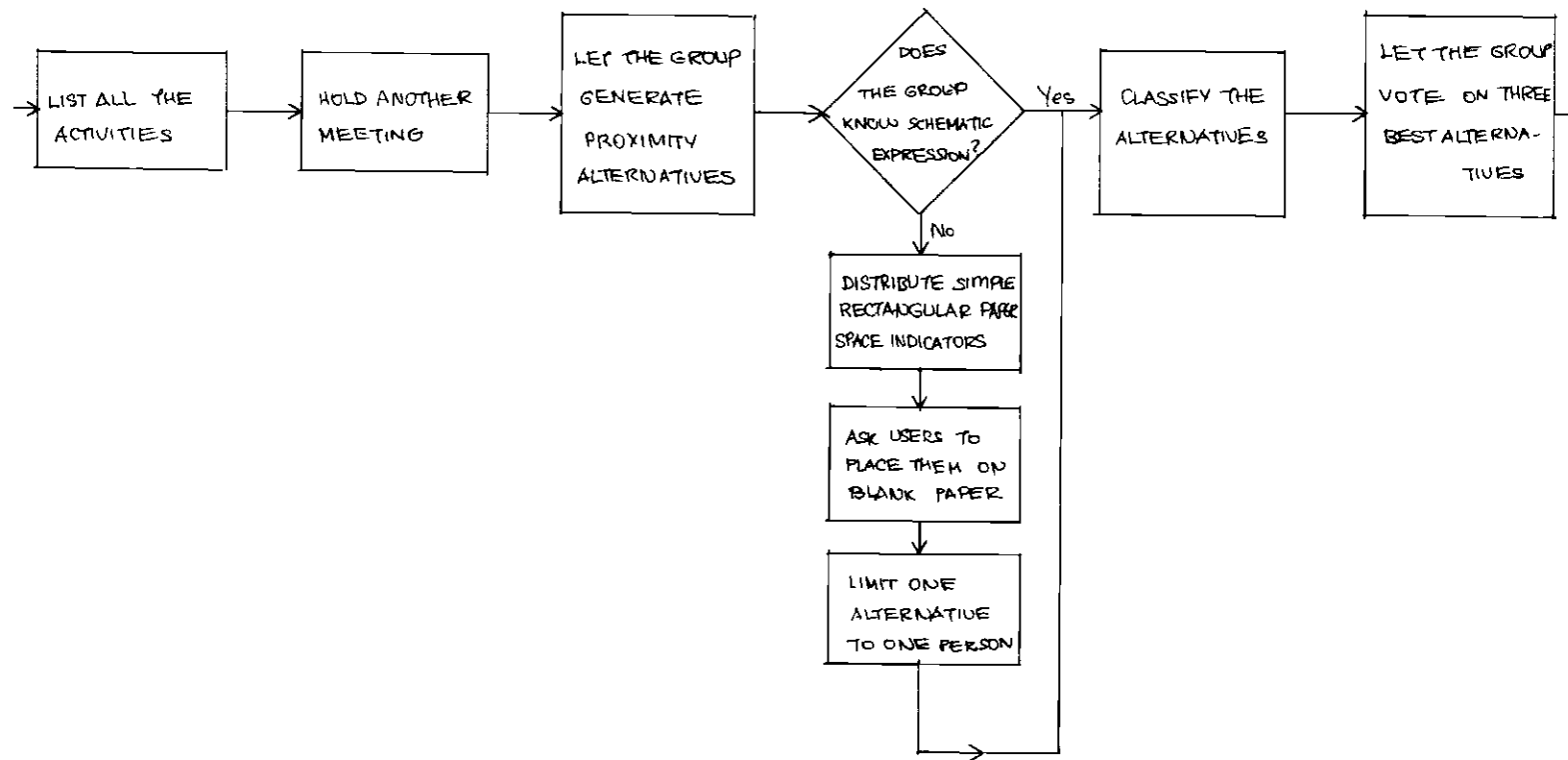
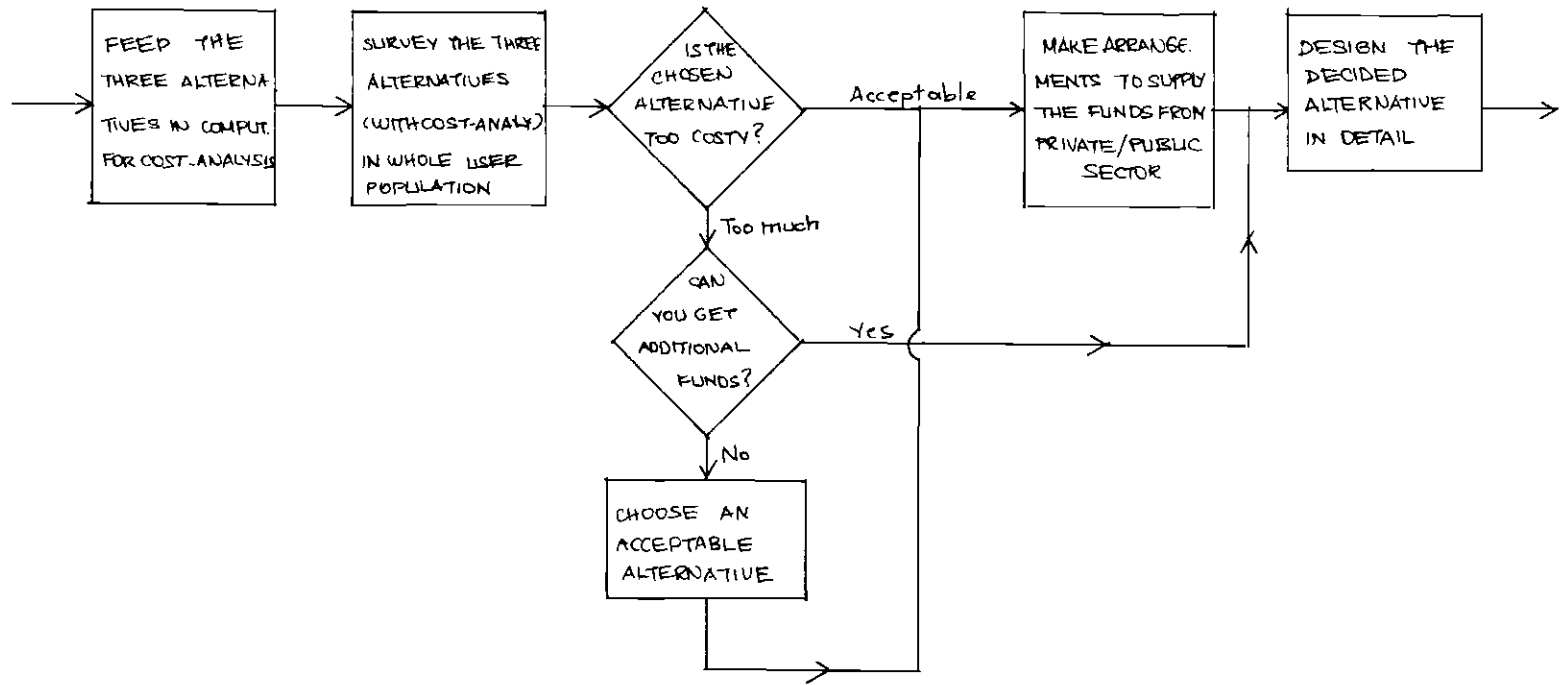


Figure 32 (Continued)



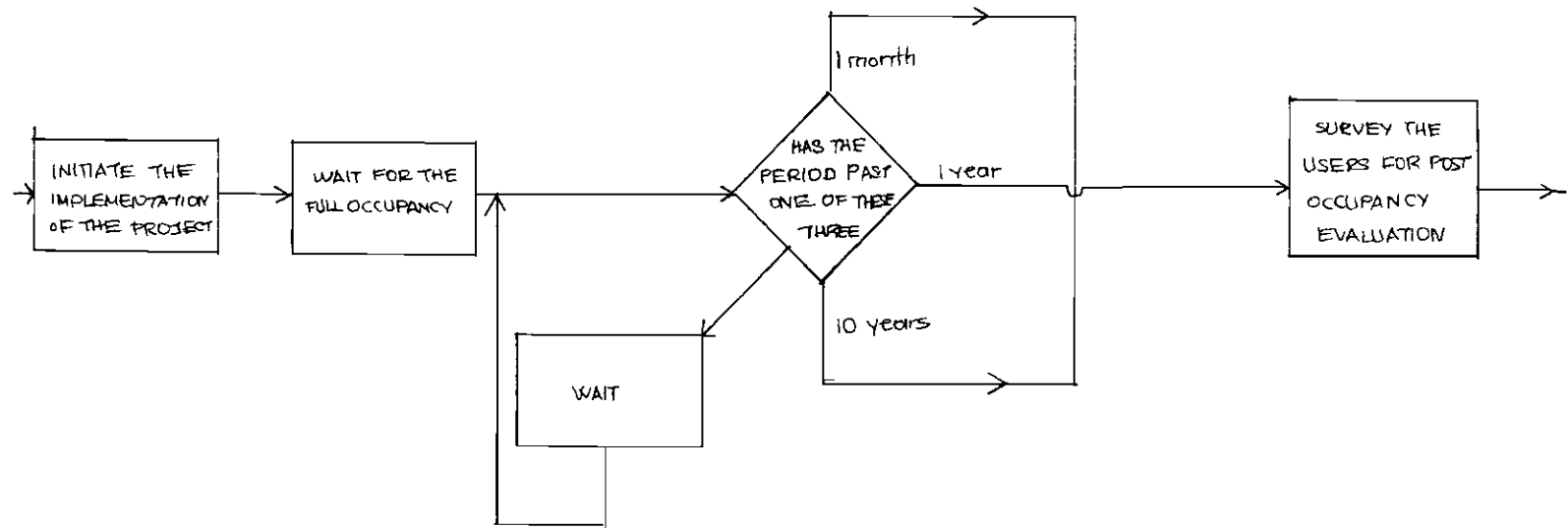


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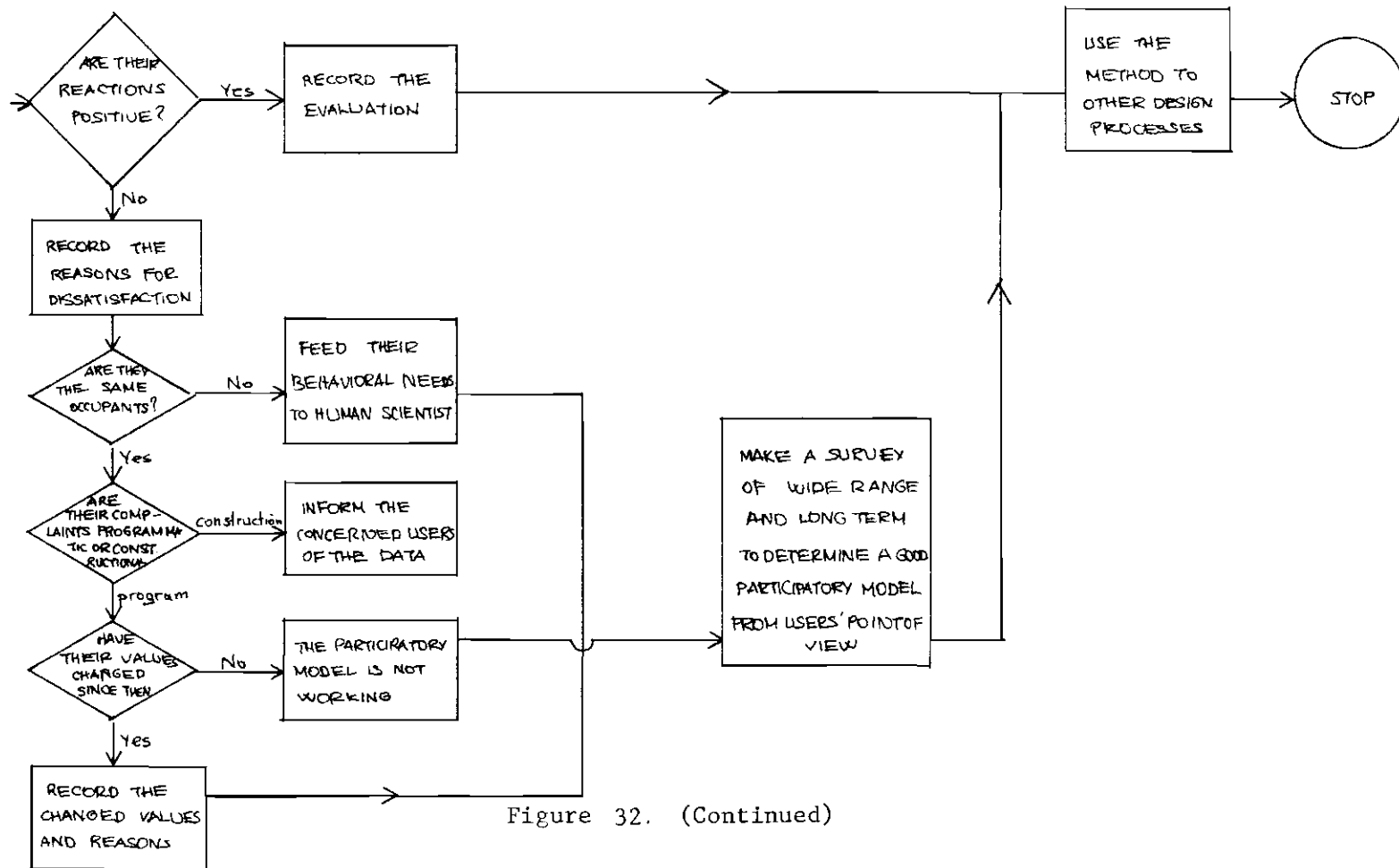


Figure 32. (Continued)

FOOTNOTES

¹Joe A. Ouye and Jean-Pierre Protzen, Choices of Participatory Planning, DMG-DRS Journal, Vol. 9 (October-December 1975) p. 304.

²Interview with Bob Segrest, College of Architecture, Atlanta, Georgia, 1 April 1977.

³D. Kretch and R. Crutchfield, Elements of Psychology, Cited by Argyris Liberakis, "Behavioral Tendencies as Architecture Starting Point," DMG-DRS Journal, (July-September 1973), 7:3, p. 231.

⁴N. Calder, The World in 1984. Ibid. p. 231.

⁵E. Hall, The Silent Language. Ibid. p. 231.

⁶Ibid. p. 231.

⁷Ibid. p. 232.

⁸John K. Page, Design Participation-Proceedings of the Design Research Society's Conference Manchester September 1971, edited by Nigel Cross, (London: Academi Editions, 1972) p. 283.

⁹Ibid. p. 233.

¹⁰Constance Perin, With Man in Mind, Cambridge MIT Press (1970) p. 39.

¹¹Alan Day, The Limits of Participation. DMG-DRS Journal 8:1 (January-March 1974) pp. 25-30.

¹²Karl Popper, Conjectures and Refutations: The Growth of Scientific Knowledge, quoted in Joe A. Ouye and Jean-Pierre Protzen's "Choices of Participatory Planning," DMG-DRS Journal. 9:4 (October-December 1975) p. 304.

¹³John Rawls, The Theory of Justice, Ibid. p.305.

¹⁴Ibid. p. 306.

¹⁵C. L. Crickmay, "The Threat of Planned Living," DMG-DRS Journal, 8:3 (July-September 1974) p. 148.

¹⁶Ibid. p. 305.

¹⁷Lisa P. Peattie, "Reflections on Advocacy Planning," The Comprehensive Planning Process Several Views. American Institute of Planners, Washington, D. C., American Institute of Planners, (1975) p. 160.

FOOTNOTES
(Continued)

¹⁸Ibid. pp. 161-166.

¹⁹Martin Krampen, "Type Psychology and Representative Citizen Participation in Planned Projects," DMG-DRS Journal 7:4 (October-December 1973) p. 312.

²⁰Gary T. Moore, Review of Emerging Methods in Environmental Design and Planning, DMG-DRS Journal, 7:3 (July-September 1973) p. 248.

²¹Peter Stringer and Maureen Taylor, "Plans as Seen by the Public," cited by Maureen Taylor, "Towards a Redefinition of User Needs," DMG-DRS Journal, 7:2 (April-June 1973) p. 171.

²²Hans Harms, "Limitations of Self Help," Architectural Design Vol. XLVI (April 1976) p. 230.

²³Hugh Morley Zimmers. "Community Design Centers," 12345678910 Eleven Views Collaborative Design Community Development edited by Jacob Pearce 20:2 (North Carolina: North Carolina University Press 1971) p. 96.

²⁴Ibid. p. 98.

²⁵Ibid. p. 100.

²⁶John K. Page, "On The Design of Systems For Effective User Design Participation in Urban Designs,": DMG-DRS Journal, 7:4 (October-December 1973) pp. 285-286.

²⁷Ibid. p. 250.

²⁸Heinz Werner, "The Concept of Development from a Comparative and Organismic Point of View" Ibid...250.

²⁹Ibid. p. 313.

³⁰Ibid. p. 313.

³¹Ibid. p. 282.

³²Christopher Alexander, M. Silverstein, S. Angel, D. Ishikawa, and D. Abrams. Houses Generated by Patterns, Berkeley, California: the Center for Environmental Structure. p. 53.

FOOTNOTES
(Continued)

³³Ibid. p. 234.

³⁴"The Addition to the Architecture Building," (Documents supplied by Professor Joesph Smith of College of Architecture, Georgia Tech.)

³⁵Crawford Jones "Architects Preview Addition, Question to New Design Feasibility," Technique, College Newspaper, (April 29, 1977), p. 1.; Wesley Petty, "Architects Dislike Annes: Petition for New Design," Technique, College Newspaper, (May 6, 1977) p. 1; Ernie Maddock, "Protest Forces Redesign of Annex," Technique, College Newspaper, (May 13, 1977), p. 1.

³⁶Courses and Professors list supplied by the Administration Office of the College of Architecture.

³⁷Ibid. Same as 34.

SOURCES FOR TABLES

Table

2. Source: Argyris Liberakis. "Behavioral Tendencies as Architectural Starting Point" DMG-DRS Journal 7:3 (July-September 1973) p. 234.

SOURCES FOR ILLUSTRATIONS

Figure

1. "Towards A Redefinition of User Needs" by Maureen Taylor, DMG-DRS Journal: Design Reserach and Methods. 7:2 (April-June 1973) p. 170.
- 2,3. "Toward Citizen Participation in Planning and Design" by Floyd E. Barwig, DMG-DRS Journal: Design Research and Methods. 7:4 (October-December 1973) pp. 347-348.
- 4,5. "Results of an Initial Field Study of New Techniques for Citizen Participation in Educational Facilities Planning" by Zucker, EDRA 18-3, pp. 8-9.
6. Source: Information Processes for Participatory Design" by Yona Friedman, Design Participation-Proceedings of the Design Research Society's Conference Mancher, September 1971, edited by Nigel Cross, London: Academy Editions, 1972, p. 49.
- 7,8. "An Experimental Model For Making Design Decisions" by John K. C. Lui, DMG-DRS Journal 8:59.
- 9,10,11,
12,13. "A Playground: Participation in Design" by Hanno Weber, in DMG-DRS Journal 9:3. pp. 216-219.
- 14,15. "A Contextual Dwelling Cell Morphology: Discourse for Participation in Residential Design" by Hanno Weber, DMG-DRS Journal 9:2, pp 174,176.
- 16,17,
18. "An Alternative Strategy for Planning an Alternative School" by Henry Sanoff and George Barbour. DMG-DRS Journal. 7:4 (October-December 1973) pp. 358, 355,358.
- 19,20,21,
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25,26. Oregon Experiment by C. Alexander, M. Silverstein, S. Angel, S. Ishikawa, and S. Abram. pp. 44,52,53,54,55,56.
- 27,28. "Behavioral Tendencies as Architectural Starting Point" by Argyris Liberakis in DMG-DRS Journal: Design Research and Methods. 7:3, p. 229 (both) (July-September 1973) pp. 230, 231.

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